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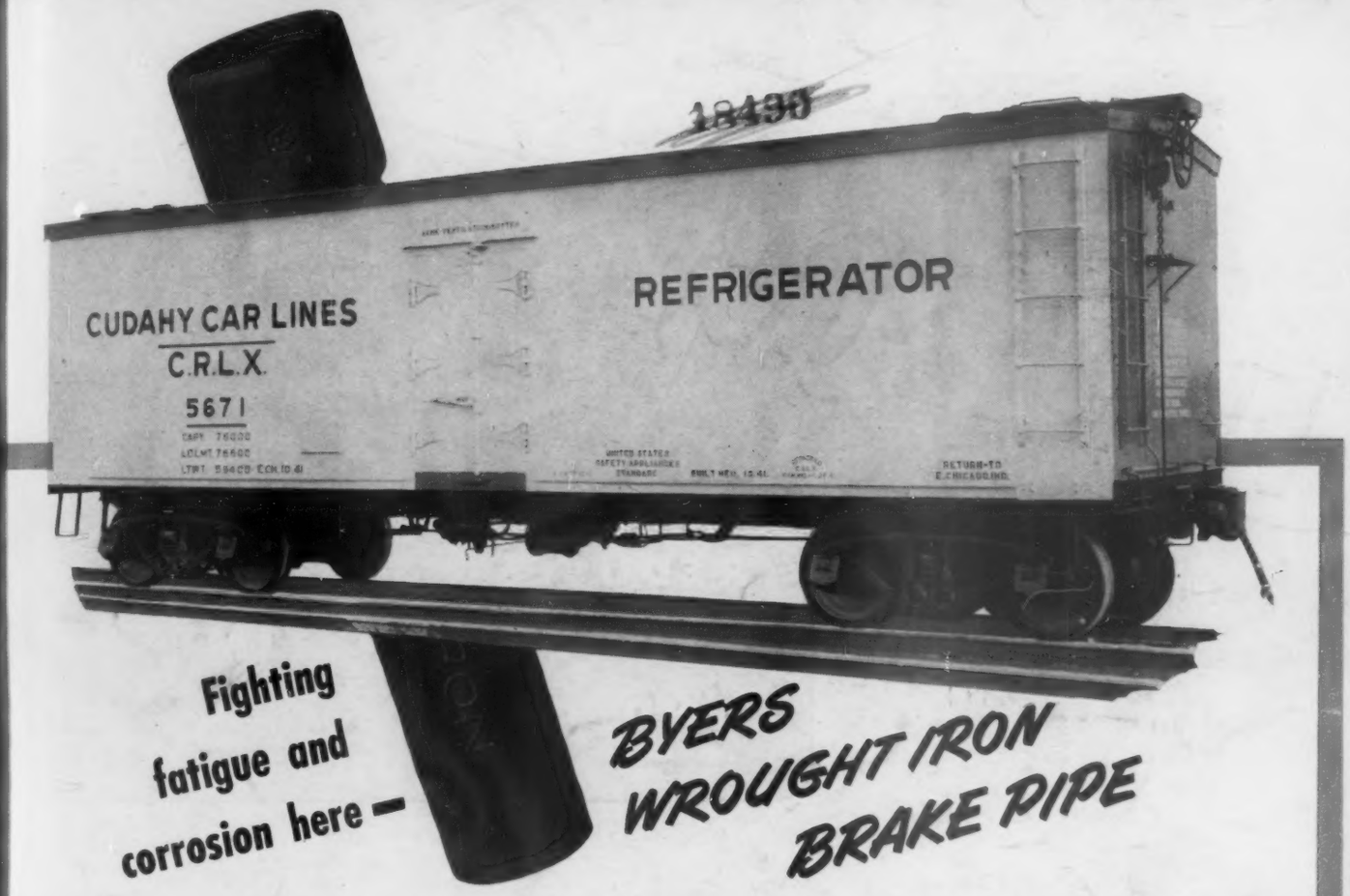
Railway Age

Founded in 1856



Fighting fatigue and corrosion here—

BYERS WROUGHT IRON BRAKE PIPE

When the Cudahy Packing Company of Chicago ordered new refrigerator cars from American Car and Foundry Company, the engineers took special care to assure long life and dependability. In the air brake piping, where not only severe vibration but corrosion from brine drippings are to be expected, a time-tried material was specified—wrought iron. Byers Wrought Iron Pipe was installed.

The frequency with which wrought iron is selected for this double-threat service by cost-conscious customers, who know almost to a penny how much their brake piping costs them per year, is a real endorsement of its superior durability.

This, of course, is not the only quality that recommends Byers Wrought Iron, for it has other outstanding advantages that show up during installation. It stands the punishing short-radius bends that must be made during fitting, without any adverse effect on its composition or character. And because of its freedom from "spring-back," it retains template shape after bending.

The reason that Byers Wrought Iron possesses such unusual resistance to fatigue failure and to corrosion is found in its unusual structure. Tiny fibers of glass-like silicate slag are threaded through the body of high-purity iron. This gives a structure that might be compared to that of a stranded wire cable, and accounts for the ability of wrought iron to resist vibration and shock. These fibers also act like baffles in halting and dispersing corrosive attack and help anchor the initial protective film, which shields the underlying metal.

Our General Catalog will give full dimensional information on Byers Wrought Iron pipe. We will be glad to send you a copy for your file. Byers Wrought Iron is, of course, available now in any quantity, for any project.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Chicago, St. Louis, Houston, Seattle, San Francisco, Atlanta.

BYERS

GENUINE WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE ALLOY STEELS · OPEN HEARTH ALLOY STEELS
CARBON STEEL TUBULAR PRODUCTS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

REDUCES PRODUCTION TIME AND COSTS

With Oxweld's oxy-acetylene flame-cutting equipment, mechanical departments can produce locomotive and car parts of almost any size and shape with speed and economy. Parts can be made as they are needed from stock plate, sheets, billets, and slabs or from metal salvaged from retired equipment.

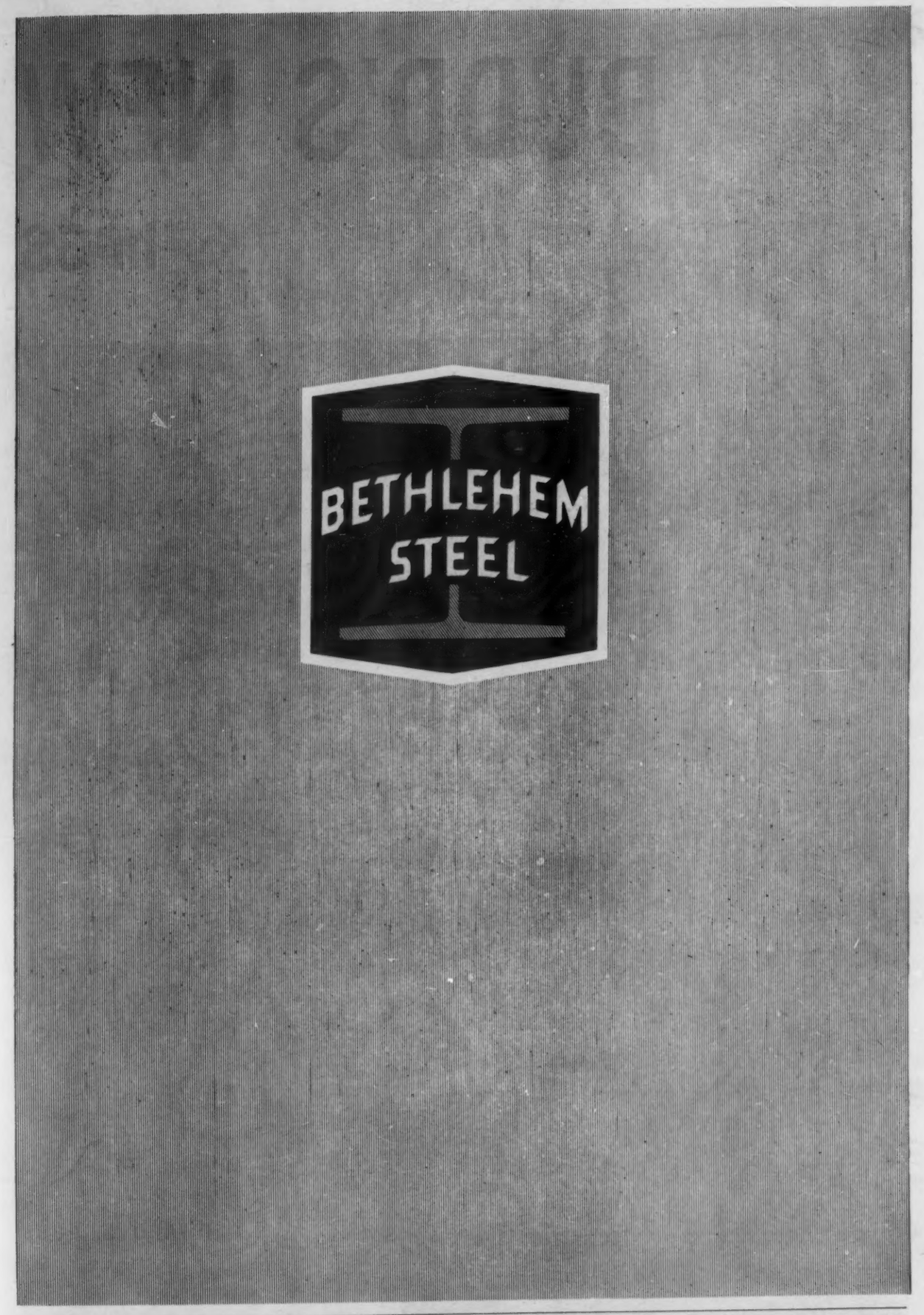
In the illustration, an OXWELD machine is cutting out the front end of an air pump bracket from 1-inch steel plate. The bracket is cut smoothly and accurately and requires little or no machining before assembly.

The Oxweld Railroad Service Company instructors have had years of shop training and experience. Ask a representative to show you how to shape-cut many of the parts you need with substantial savings in time and cost.

The word "Oxweld" is a registered trade mark.

SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

THE OXWELD RAILROAD SERVICE COMPANY
Unit of Union Carbide and Carbon Corporation
UCC
Carbide and Carbon Building — Chicago and New York



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BUDD'S NEW

in 58

The New York Central Railroad recently ordered 112 stainless steel passenger cars from the Edward G. Budd Manufacturing Company. Added to the 127 previously ordered, this makes 239 Budd-designed cars now ordered and building for this great railway system.

Of the 112 cars most recently ordered, approximately 80 percent are sleeping cars and 58 of them will contain the remarkable new Double Bedrooms which Budd has just introduced.

Railroad men have acclaimed this Double Bedroom as the most satisfactory sleeping accommodation of its type ever devised. It has four distinct features of superiority.

EDWARD G. BUDD

DOUBLE BEDROOM

New York Central Sleeping Cars

The lavatory and toilet facilities are placed on the aisle side of the room and are enclosed in a separate compartment, thus giving the privacy desirable for double occupancy.

This design permits a wide panorama window, providing ample light and view to each occupant of the room.

Passengers may have a choice of beds running lengthwise or crosswise of the car as they occur in alternate rooms.

By folding the partition between them, two Double Bedrooms may be arranged en suite, forming the large Master Room with seats for six passengers and two separate toilet rooms. When bedtime comes, the partition may be replaced, making again two rooms, with communicating door.

Many of the sleeping cars ordered by the New York Central are combinations of Double Bedrooms and Cabins for individual occupancy. Other cars included are Lounge and Observation, Diners, combination Kitchen and Lounge Cars and Baggage-Dormitory Cars. Altogether, this new order will make the equivalent of eight complete stainless steel trains to be added to the New York Central's fleet.

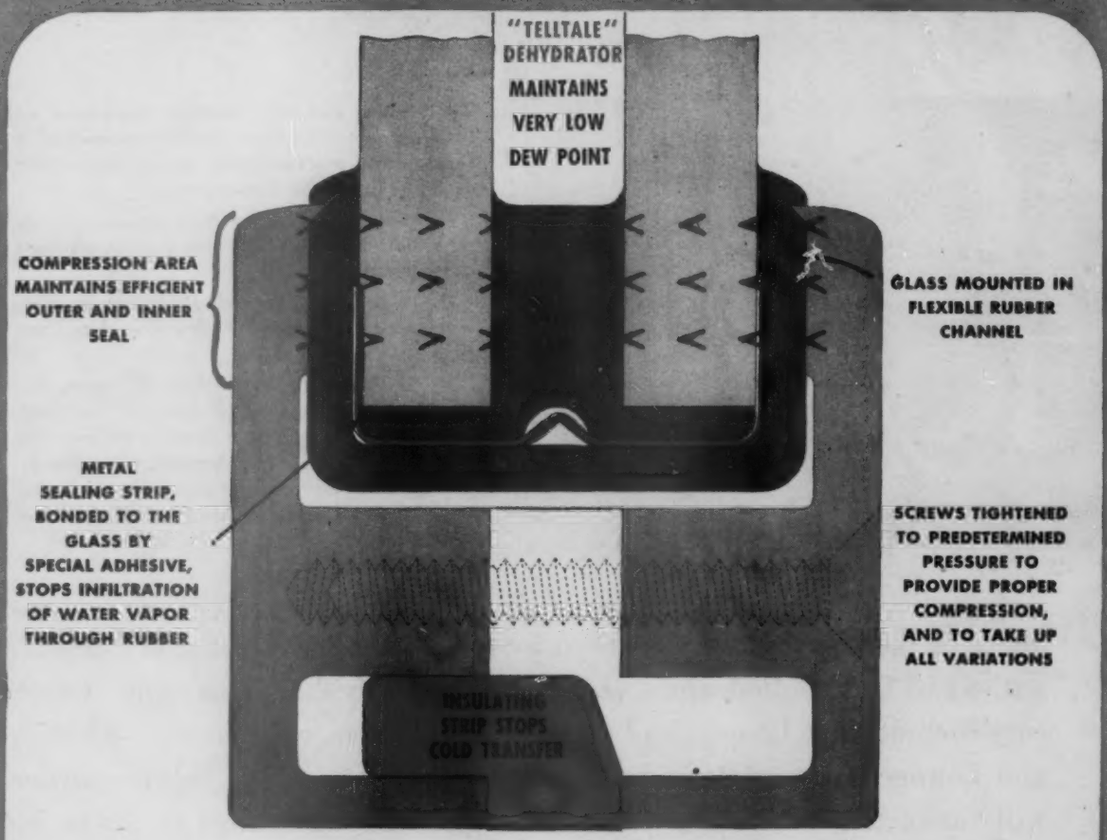
MANUFACTURING CO., PHILADELPHIA • DETROIT Budd

TRIPLE SEALED !!

For No Fog . . No Film . . No Frost

New Edwards DOUBLE GLAZED Unit

Built to Last for the Life of the Car


"TELLTALE" DEHYDRATOR MAINTAINS VERY LOW DEW POINT
COMPRESSION AREA MAINTAINS EFFICIENT OUTER AND INNER SEAL
GLASS MOUNTED IN FLEXIBLE RUBBER CHANNEL
METAL SEALING STRIP, BONDED TO THE GLASS BY SPECIAL ADHESIVE, STOPS INFILTRATION OF WATER VAPOR THROUGH RUBBER
SCREWS TIGHTENED TO PREDETERMINED PRESSURE TO PROVIDE PROPER COMPRESSION, AND TO TAKE UP ALL VARIATIONS
INSULATING STRIP STOPS COLD TRANSFER

NO FOG
Triple seal positively and permanently stops all mechanical leakage and infiltration of water vapor into dead air cell.

NO FILM
No repeated moisture formations (fogging) to progressively build up objectionable scum on inner surfaces of glass.

NO FROST
No Metal Contact From Outside To Inside.

Edwards advanced engineering now brings to the railroads a highly developed and extremely sturdy double glazed unit affording absolutely TOP performance. Consider these features . . . crystal-clear window brilliance that age will not dim . . . elimination of sash maintenance . . . highly efficient insulation of car interior . . . a Sash Unit built to last for the life of the car. For Complete Information . . . write to O. M. Edwards Co., Inc., Syracuse, N.Y.

EDWARDS SASH
THE EYES OF TRANSPORTATION

SASH FOR EVERY TYPE OF TRANSPORTATION — ON LAND, ON THE SEAS, IN THE AIR

Unit

e Car

Magor

DESIGNERS AND MANUFACTURERS

of Freight Cars of All Types Including Air Dump Cars

Special openings, double side and end door cars, offer your shippers extra service. We can offer you complete technical information on these types.

★

MAGOR CAR CORPORATION

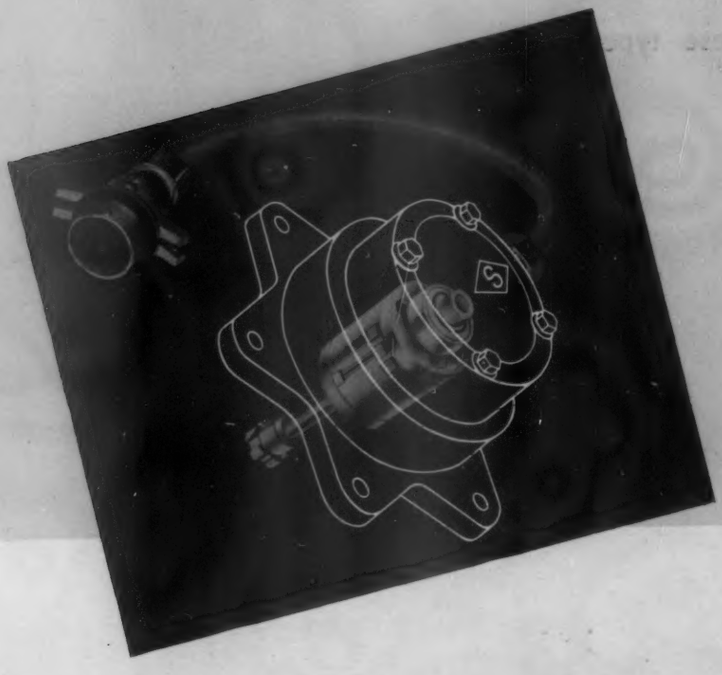
50 Church Street

New York 7, N. Y.

Slid Flats can't happen here!

with the

American Brake Shoe Controller...



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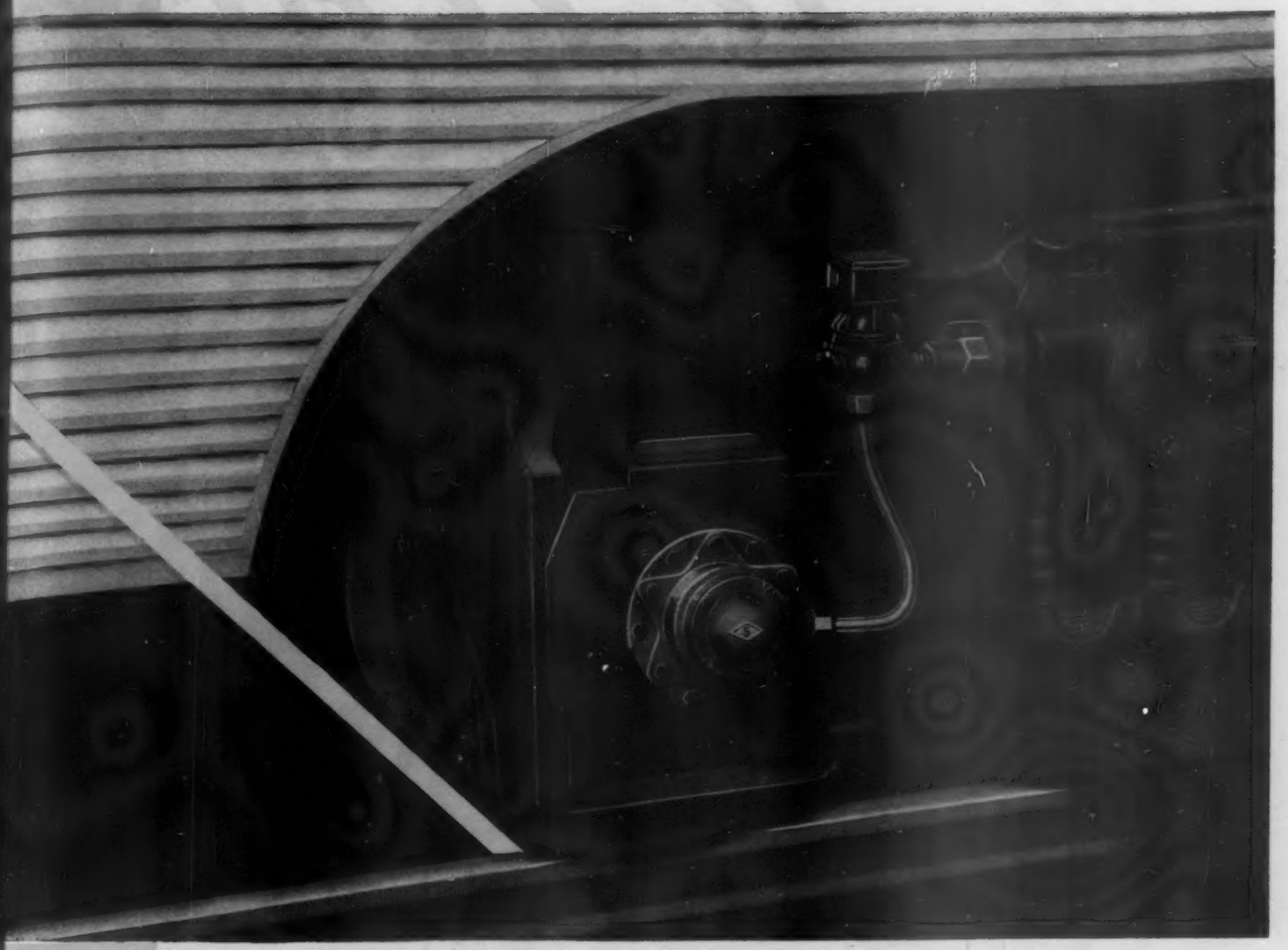

You increase car availability and promote passenger comfort when you prevent slid flat wheels during braking. Prevent them the *positive* way with the American Brake Shoe Controller proved by years of high speed passenger train service.

You can rely on the American Brake Shoe Controller to detect wheel slippage, correct it instantly, and act positively and unfailingly to restore full brake as soon as slippage is eliminated. Rugged in its construction, simple in its operation, controller can be tested while car is in motion or standing.

AMERICAN
Brake Shoe
COMPANY

BRAKE SHOE AND CASTINGS DIVISION, 230 Park Avenue, New York 17, N. Y.

11 YEARS+

PULLMAN-STANDARD HAS PIONEERED:

Light weight hopper cars
—15 YEARS AGO

Light weight box cars
—11 YEARS AGO

Light weight refrigerator cars
—11 YEARS AGO

Pullman

CHICAGO • NEW YOR

S AGO...

PULLMAN-STANDARD BUILT THIS *LIGHTWEIGHT* REFRIGERATOR CAR

THE WEIGHT SAVING OVER TYPICAL REFRIGERATOR CARS WAS FROM 10,000 TO 13,000 POUNDS.

This car has been in continuous service since being built and has given a good account of itself.

It is of low alloy high tensile steel, all welded construction. The steel construction provides a tight super structure which protects insulation and prevents air leakage. The body can be removed from the underframe as a unit without dismantling.

This car was exhibited at the A.A.R. convention in 1936 to a large number ot railroad men from all parts of the country.

Light weight now dominates the railroad passenger car field, and it is bound by economics to become equally as potent in the freight car field. In the replacement of large quantities of war-worn refrigerator cars we invite your consideration of light weight construction.

n Standard CAR MANUFACTURING COMPANY

W YOR EVELAND • WASHINGTON, D. C. • PITTSBURGH • BALTIMORE • BIRMINGHAM • WORCESTER, MASS.

n Francisco Sales Representative, Mark Noble

The company which pioneered in the development of Electronic "blind-flying" some fifteen years ago now presents to the railroads of America a new system of

ELECTRONIC CENTRALIZED TRAFFIC CONTROL

This system has been designed specifically to meet the needs of modern railroad operation.

Examination will reveal these features:

- *Well-considered, carefully planned simplicity of design, rugged construction, and reliability of operation throughout the entire system.*
- *Unusually economical in time and money to install and maintain.*
- *Will yield approximately double the track capacity given by Manual or Automatic Block operation.*
- *Capacity of one Control Office is more than sufficient to handle two average Dispatching Divisions.*
- *Control Office may be located at any point in or out of the controlled territory.*
- *Operates over existing line wire facilities without interfering with present use.*
- *Provides for independent and instantaneous transmission of all controls and indications on same line wires.*
- *Operates on closed-circuit principle.*
- *Vital circuits can be brought to the control-office and used as authority for train movements.*

In addition there is—

THE MODIFIED SYSTEM OF CENTRALIZED TRAFFIC CONTROL

This is applicable where operating problems do not demand the more complete system.

This modified system will accomplish the following:

- *Eliminate written train orders.*
- *Provide for the movement of trains by signal indication over "hand-operated" switch territory.*
- *Provide for constant and continuing control of traffic movements and "train-meets."*
- *The installation cost is moderate.*

For additional information communicate with RAILWAY DIVISION

AIRPLANE & MARINE INSTRUMENTS, Inc.

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Precision Radio for Communication, Transportation and Navigation.

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Plant:
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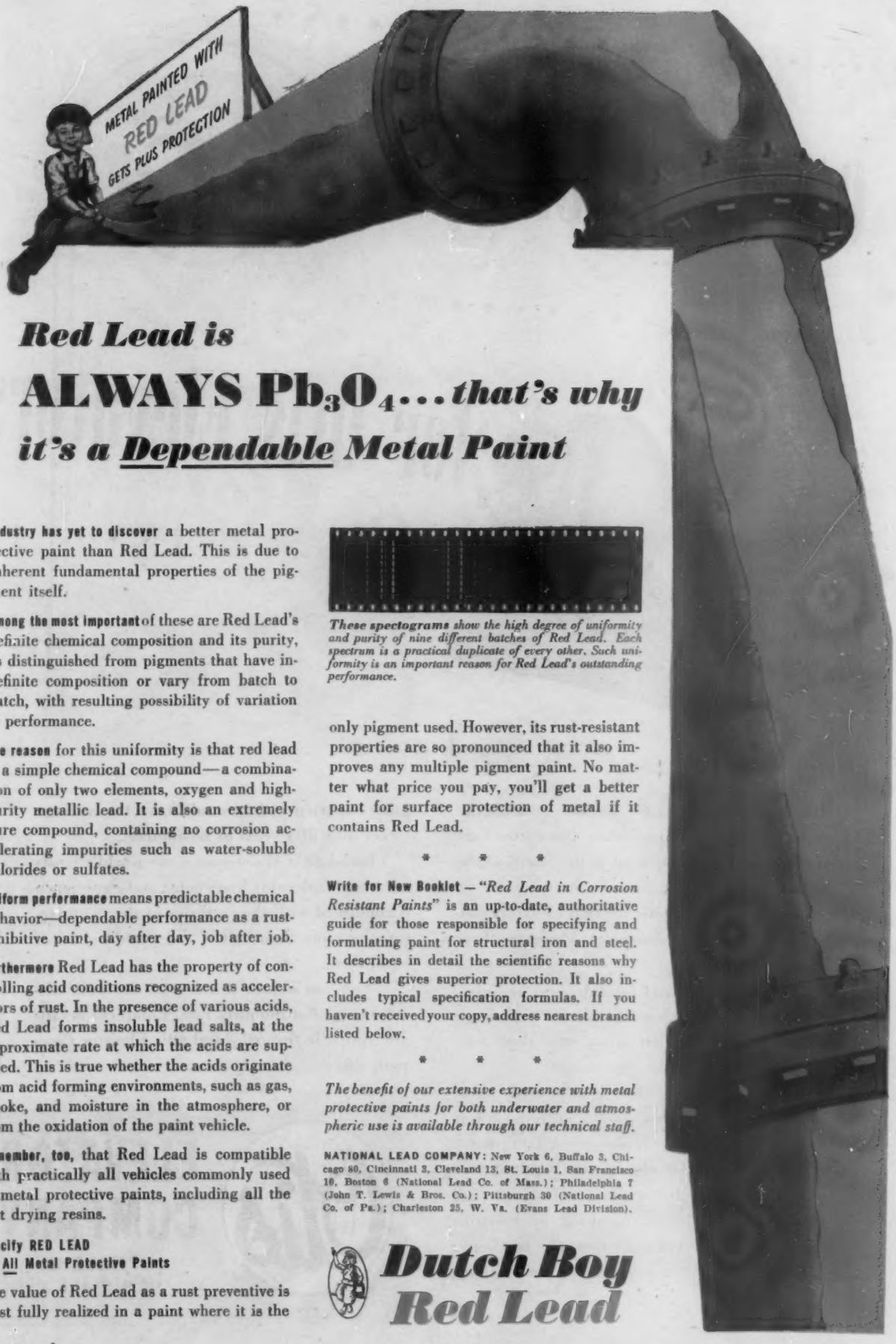


Red Lead is
ALWAYS Pb_3O_4... *that's why it's a Dependable Metal Paint*

Industry has yet to discover a better metal protective paint than Red Lead. This is due to inherent fundamental properties of the pigment itself.

Among the most important of these are Red Lead's definite chemical composition and its purity, as distinguished from pigments that have indefinite composition or vary from batch to batch, with resulting possibility of variation in performance.

The reason for this uniformity is that red lead is a simple chemical compound—a combination of only two elements, oxygen and high-purity metallic lead. It is also an extremely pure compound, containing no corrosion accelerating impurities such as water-soluble chlorides or sulfates.

Uniform performance means predictable chemical behavior—dependable performance as a rust-inhibitive paint, day after day, job after job.

Furthermore Red Lead has the property of controlling acid conditions recognized as accelerators of rust. In the presence of various acids, Red Lead forms insoluble lead salts, at the approximate rate at which the acids are supplied. This is true whether the acids originate from acid forming environments, such as gas, smoke, and moisture in the atmosphere, or from the oxidation of the paint vehicle.

Remember, too, that Red Lead is compatible with practically all vehicles commonly used in metal protective paints, including all the fast drying resins.

Specify RED LEAD
for All Metal Protective Paints

The value of Red Lead as a rust preventive is most fully realized in a paint where it is the only pigment used. However, its rust-resistant properties are so pronounced that it also improves any multiple pigment paint. No matter what price you pay, you'll get a better paint for surface protection of metal if it contains Red Lead.

These spectograms show the high degree of uniformity and purity of nine different batches of Red Lead. Each spectrum is a practical duplicate of every other. Such uniformity is an important reason for Red Lead's outstanding performance.

* * *

Write for New Booklet — *"Red Lead in Corrosion Resistant Paints"* is an up-to-date, authoritative guide for those responsible for specifying and formulating paint for structural iron and steel. It describes in detail the scientific reasons why Red Lead gives superior protection. It also includes typical specification formulas. If you haven't received your copy, address nearest branch listed below.

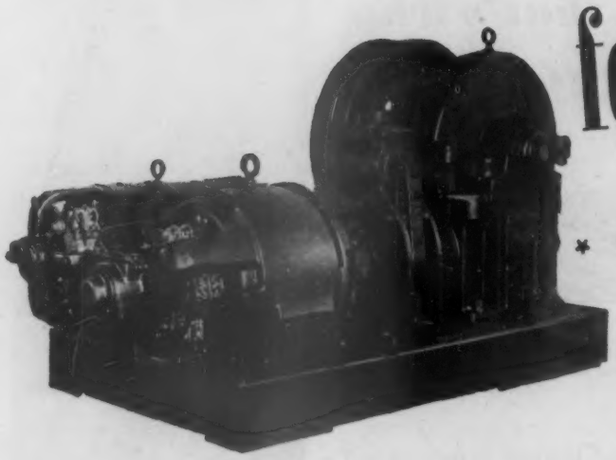
* * *

The benefit of our extensive experience with metal protective paints for both underwater and atmospheric use is available through our technical staff.

NATIONAL LEAD COMPANY: New York 6, Buffalo 3, Chicago 80, Cincinnati 3, Cleveland 13, St. Louis 1, San Francisco 10, Boston 6 (National Lead Co. of Mass.); Philadelphia 7 (John T. Lewis & Bros. Co.); Pittsburgh 30 (National Lead Co. of Pa.); Charleston 25, W. Va. (Evans Lead Division).

Dutch Boy Red Lead

Otis Maintenance for Otis Elevators



Otis Maintenance is a service under which the owners of Otis elevators place the entire care of their elevator equipment in the hands of the manufacturer.

This service by Otis for Otis elevators cannot be duplicated at any price. There are three reasons for this:

Men — a field and headquarters organization combining the knowledge and experience of trained elevator men with that of those who designed and built the equipment.

Materials — including genuine Otis parts, special Otis tools, and over a million dollars worth of emergency replacement equipment.

Maintenance Methods — the result of periodic inspections, lubrication, adjustment and replacement of parts, supported by scientific study and research to make elevators run better and last longer . . . a clinic that, *in one day*, gains experience that would take the average owner over fifty years to accumulate.

Under Otis Maintenance the world's greatest store of elevator knowledge and experience is combined with the facilities of the manufacturer of more than half of the world's elevator equipment.

You can obtain this service for your elevators at a flat monthly rate. Complete details are available through local Otis Elevator Company offices.

Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

MEET YOUR STAR SALESMEN

*Velon**

SOILPROOF BEAUTY LURES PASSENGERS

Velon makes interiors of lighter, brighter, passenger-enchanting colors practical. *Velon* cuts upkeep cost to an all-time low. One quick wipe of a cloth dampened with water or cleaning fluid instantly restores the soilproof beauty of its non-absorbent threads. Years of wartime use in rail, bus and air lines prove *Velon* will never buckle or bag out of shape—can't snag, scuff or conduct heat. Start specifying *Velon* now from your regular fabric sources. Firestone will gladly supply them with *Velon* yarn samples and full technical advice.

FOAMEX*

LASTING COMFORT BRINGS THEM BACK

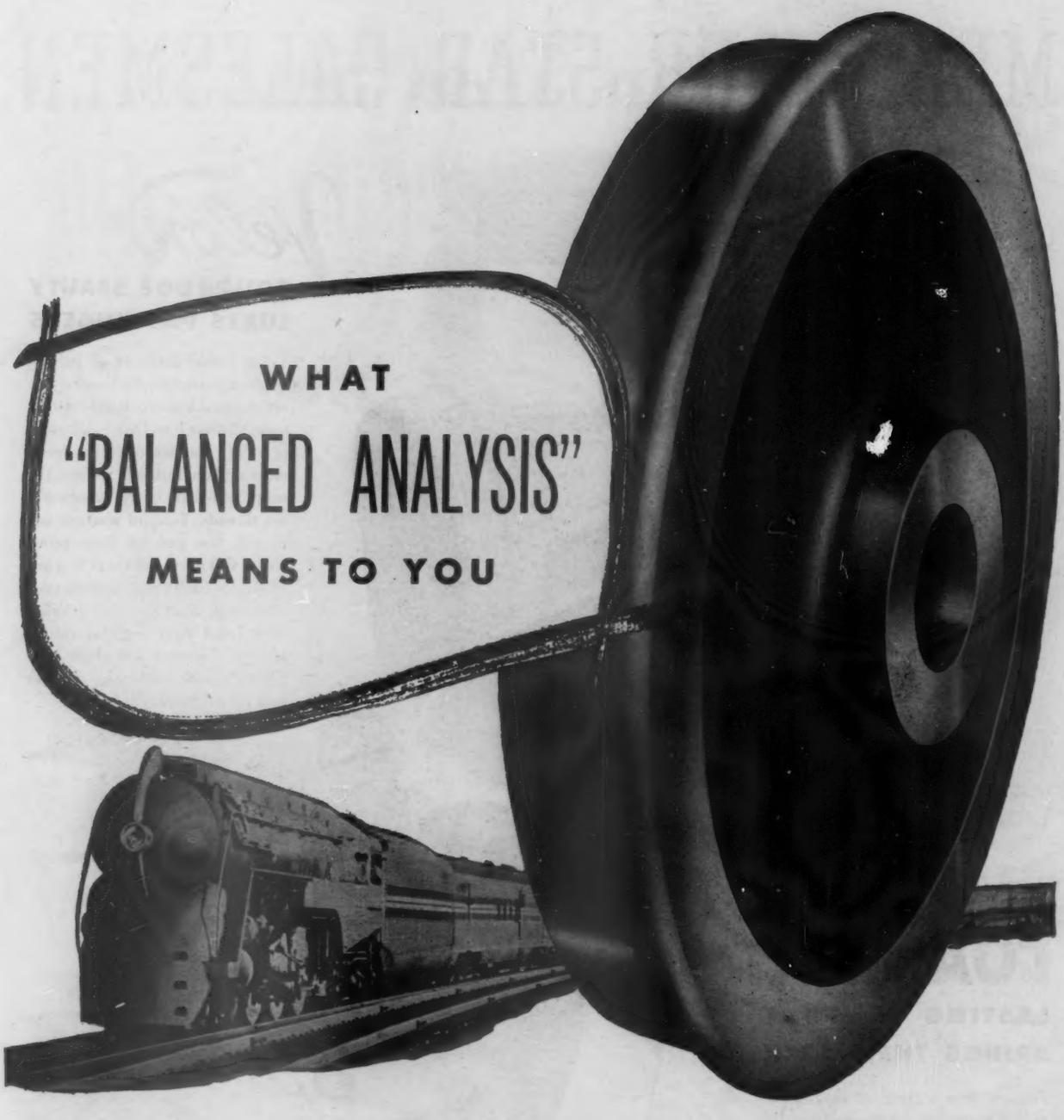
Foamex puts a cloud of magic, air-cooled buoyancy (millions of breathing, super-soft air-and-latex cushions) between passenger and fatigue. *Foamex* replaces old-style upholstery stuffing and innards with *one* sag-proof, lump-proof material. Years more "brand-new" wear, proved by *extra* wartime use on railroad, highroad and skyroad. Now, electronic processing makes *Foamex* still more durable. For the *greatest* seating luxury at *lowest* maintenance cost—insist on *Foamex!* Write Firestone, Akron, Ohio, today for complete details.

BEST TODAY··· STILL BETTER TOMORROW

Firestone

REG. U.S. PAT. OFF. TRADE MARK

LISTEN TO THE VOICE OF FIRESTONE MONDAY EVENINGS OVER NBC



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"Balanced analysis" is more than a slogan for ARMCO Stress Resistant Wheels. It's an exclusive process that gives wheels a high resistance to shelling for a given resistance to thermal cracking.

This means greater safety and more profitable wheel miles for the vital years ahead. It's the big reason why 32 of the country's leading roads have ARMCO S-R Wheels in service.

These railworthy wheels not only start rolling with low internal stress, but they strongly resist stresses built up in service. Your rolling stock keeps on the move in heavy traffic.

Ask us for all the facts on ARMCO Stress Resistant Wheels. Just call our nearest district office, or write The American Rolling Mill Company, 801 Curtis Street, Middletown, Ohio.

EXPORT: THE ARMCO INTERNATIONAL CORPORATION

ARMCO

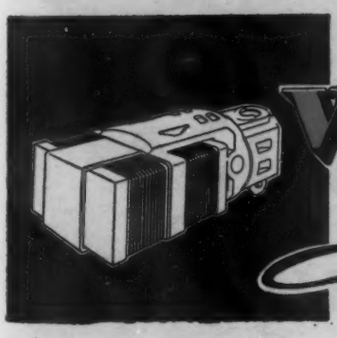
ARMCO STRESS RESISTANT WHEELS

"THE WHEEL OF TOMORROW IS ROLLING TODAY"

PROGRESSIVE AMERICAN RAILROADS are equipping their newest and finest passenger cars with Waughmat Twin Cushions. Pennsylvania • Union Pacific • New York Central • Missouri Pacific • Rock Island • Erie • Seaboard • Southern Pacific • Atlantic Coast Line • North Western • Louisville & Nashville • Burlington • New Haven • Northern Pacific • Texas & Pacific • Pere Marquette • Great Northern • St. Louis-San Francisco • Chicago & Eastern Illinois • Gulf Mobile & Ohio • Wabash • Illinois Central • Canadian Pacific • Boston & Maine • Western Pacific • Norfolk & Western • Pullman Company • Maine Central

"SHE'S THE SMOOTHEST RIDING DINER I EVER WORKED ON"

MODERNIZE with

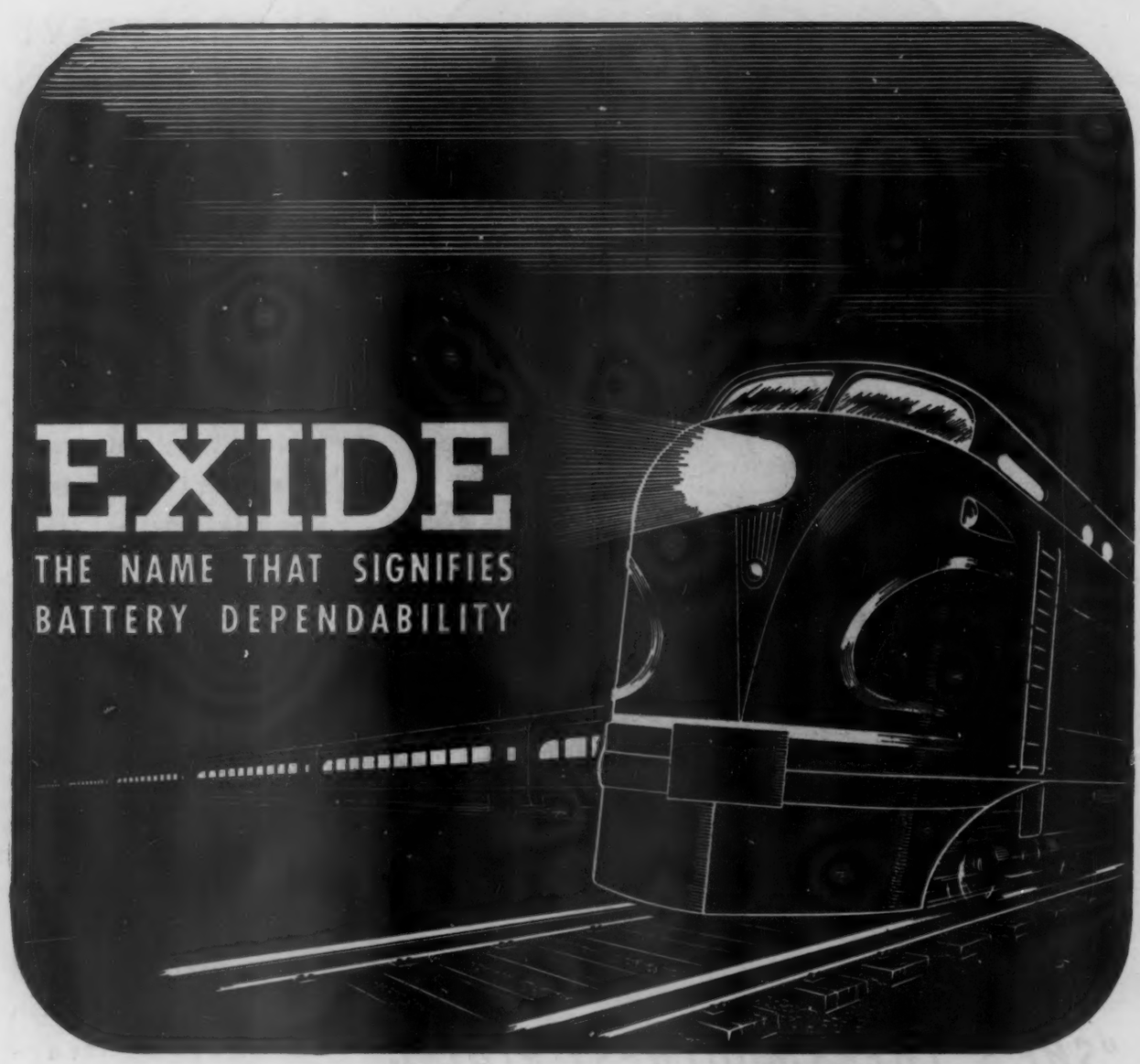


WAUGHMAT ★ *Twin Cushions*

ELIMINATE JERKS AND JARS

★ CAN BE APPLIED TO OLD OR NEW CARS

WAUGH EQUIPMENT COMPANY, New York • Chicago • St. Louis • Canadian Waugh Equipment Company: Montreal



EXIDE dependability is well known in practically every railway engineering office in the land. Trainmen, too, recognize it, for they see Exide performance in brighter lights and uniform air-conditioning. Freight agents and store keepers see it in day-long action in electric industrial trucks. Locomotive engineers see evidence of its power in the cranking of their big Diesel-electrics . . . and in the clear signal lights that guide them on their way.

Since 1891, Exides have been serving America's railroads . . . not only with dependability, but also with long-life, ease of maintenance, economy. And Exides will be serving in the fine, modern equipment that soon will be speeding over the high iron.

Exide
IRONCLAD
BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32 • Exide Batteries of Canada, Limited, Toronto

Stainless steel structural members and sheathing effectively reduce dead weight in this modern, streamlined observation car. Other railroad applications for Republic ENDURO include hardware, decorative trim, tables, chairs, lavatories, and dining car kitchen and pantry equipment.

Enduro Pays in many ways

Because of its high strength-to-weight ratio and resistance to corrosion, Republic ENDURO Stainless Steel permits valuable weight reduction in modern railway cars without sacrifice of strength or safety.

How much weight does it save? This varies, of course, but one leading car manufacturer reports savings as high as 30,000 to 40,000 pounds per car, due to the use of stainless steel construction.

Such weight savings mean a profitable reduction in operating expense, too. Less power is required . . . less fuel consumed. Fast schedules are more easily maintained.

For more information about this and the many other reasons why it pays to adopt stainless steel construction, see your equipment builder or write directly to:

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • • CLEVELAND 1, OHIO
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Republic
ENDURO STAINLESS STEEL
Reg. U. S. Pat. Off.

Other Republic Products include Alloy, High Str... and Carbon Steels — Plate, Sheets, Plates, Bars, Rolls and Rods, Roller Tubes

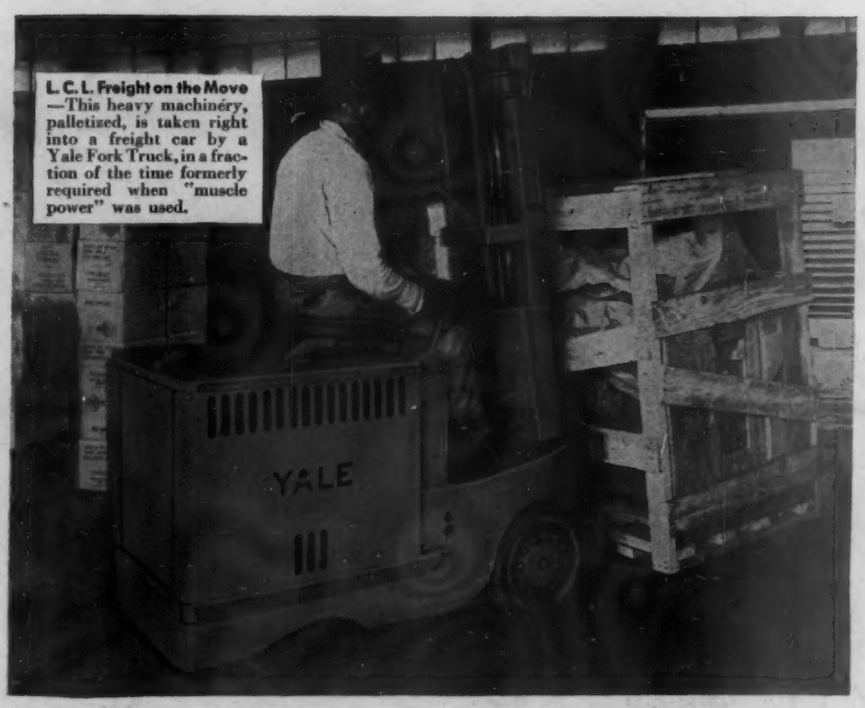
"TAILOR-MADE"

Comfort

This seat assures true, tailor-made comfort from start to finish of the longest trip. The basic design follows recommendations of America's leading anthropologist. Heywood-Wakefield exclusive construction provides adjustments to suit *individual desires* from upright to full recline. Its many features include our exclusive ratio of pitch between back and seat; adjustable leg rest; H-W rotating base; tapering backs to provide more aisle room at elbow and shoulder height; and spring or rubber filled cushions and backs. The frame is available in special quality stainless steel tubing or with Heywood-Wakefield's famous, long-wearing chromium finish. Arm caps are plastic—and, of course, there is a broad selection of color combinations for fabric and trim to match your newest equipment.

HEYWOOD-WAKEFIELD
EST. 1826

Transportation Seating Division
Gardner, Massachusetts



L. C. L. Freight on the Move—This heavy machinery, palletized, is taken right into a freight car by a Yale Fork Truck, in a fraction of the time formerly required when "muscle power" was used.

Yale Electric Industrial Trucks save time and effort—are power-packed to speed the movement of tremendous tonnage per day—travel fast and maneuver easily in congested areas. High lift models save storage space.

Yale Hand Lift Trucks are ruggedly built for long life—provide easy lift, easy roll, easy steer—take the shorter hauls at a fast clip. Wide range of models and capacities for efficient handling of skids, skid bins, and pallets.

MORE FREIGHT L.C.L. LESS WAIT!

●"Availability" is the key word in railroading today. Despite a lack of power and cars, rolling stock must be available when and where it is needed. While back shops and car shops do a mammoth job, fast, efficient *handling* of L. C. L. at freight stations also helps to keep cars available . . . quickly frees them for new assignments.

Big-capacity, "safety first" Yale Electric and Hand Lift Trucks play an important role in handling L. C. L. shipments . . . move enormous tonnage daily at a fast pace, in and out of freight cars, along platforms, throughout warerooms. Whatever the freight station—single story, two-level, or multi-story warehouse—Yale Material Handling Machinery wipes out wasteful rehandling, saves time and effort, and cuts per ton costs.

Promote "availability" to the fullest and reduce your L. C. L. handling costs. Yale will gladly show you how the planned application of hand lift and electric trucks, and accurate scales, can step up L. C. L. handling routine, and erase unprofitable "muscle money" from your payroll. Phone or write nearest representative today.

Kron Springless Dial Scales, made by Yale, eliminate excessive time- and money-wasting handling operations, provide accurate efficient, low-cost weighing and counting of all kinds of materials. Available in all types from bench to crane scales.

RAILWAY REPRESENTATIVES

New York 17, N. Y.
Eastern Railway Supplies, Inc.
110 East 42nd Street

Chicago 1, Ill.
The Earl E. Thulin Co.
Suite 339, Hotel Sherman

Washington 5, D. C.
Ralph W. Payne, Metropolitan Bank Building

Cleveland 13, Ohio
C. E. Murphy, 923 Midland Bldg.

St. Paul 1, Minn.
Robert J. Wylie, 612 Pioneer Bldg.

St. Louis 3, Mo.
Clarence Gush, 2222 Olive Street

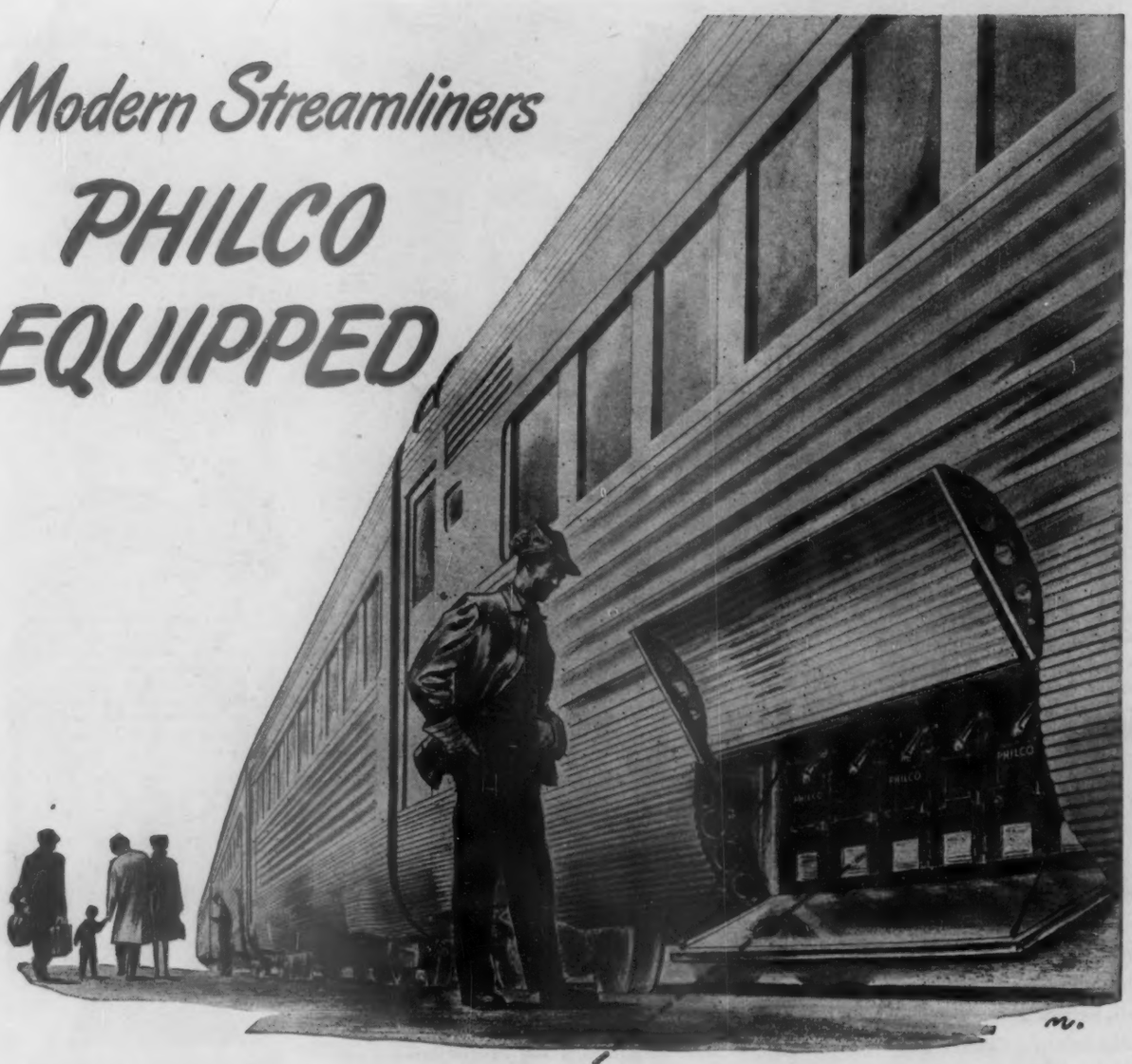
YALE

MATERIAL HANDLING MACHINERY

CUTS HANDLING COSTS . . . SAVES TIME . . . SAVES EFFORT . . . PROMOTES SAFETY

HOISTS—HAND AND ELECTRIC • TRUCKS—HAND LIFT AND ELECTRIC • KRON INDUSTRIAL SCALES

Modern Streamliners
PHILCO EQUIPPED



Philco, too, has been planning for the new era of luxury train travel. And Philco is ready with car lighting and air conditioning storage batteries of ultra modern design to provide the new passenger comforts and conveniences soon to come. You can expect a lot more from these modern Philco Batteries . . . top capacity with abundance of reserve power to maintain facilities when long stops are necessary. Their extra rugged "railroad" construction assures long-life, dependability, ease of maintenance and low cost. Write for specification data. PHILCO CORPORATION, Storage Battery Division, Trenton 7, New Jersey.

PHILCO

FOR FIFTY YEARS A LEADER IN STORAGE BATTERY DEVELOPMENT

AO Ful-Vue
ACETATE GOGGLES

Expertly Designed and Constructed for

SAFETY, COMFORT AND ATTRACTIVENESS

AO Ful-vue Acetate Goggles are lightweight for comfort during long use — yet are strong and durable. They offer all-round protection against impact from flying particles — are also available with absorptive lenses for protection against glare and injurious light rays. Particularly suited for the worker whose skin is sensitive to metal. Made in three eye sizes and three bridge sizes — with 6 Curve Super Armorplate, Clear or Calobar lenses — with or without side shields. May also be fitted with inexpensive AO Fits-On Goggles (shown in cut) to prevent pitting and scratching of the valuable lenses. Your nearest AO Safety Representative can supply you.

American Optical
COMPANY
SOUTHBRIDGE, MASSACHUSETTS
Safety Division

BETTER PIPE INSULATION

From Cab to Observation

G-B Fiberglas* Pipe Insulations

Assure Passenger Comfort and Fuel Economy

* Reg. Owens-Corning Fiberglas Corp.

G-B FLEXIBLE PIPE INSULATION

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For Steam, Hot Water and Oil Lines

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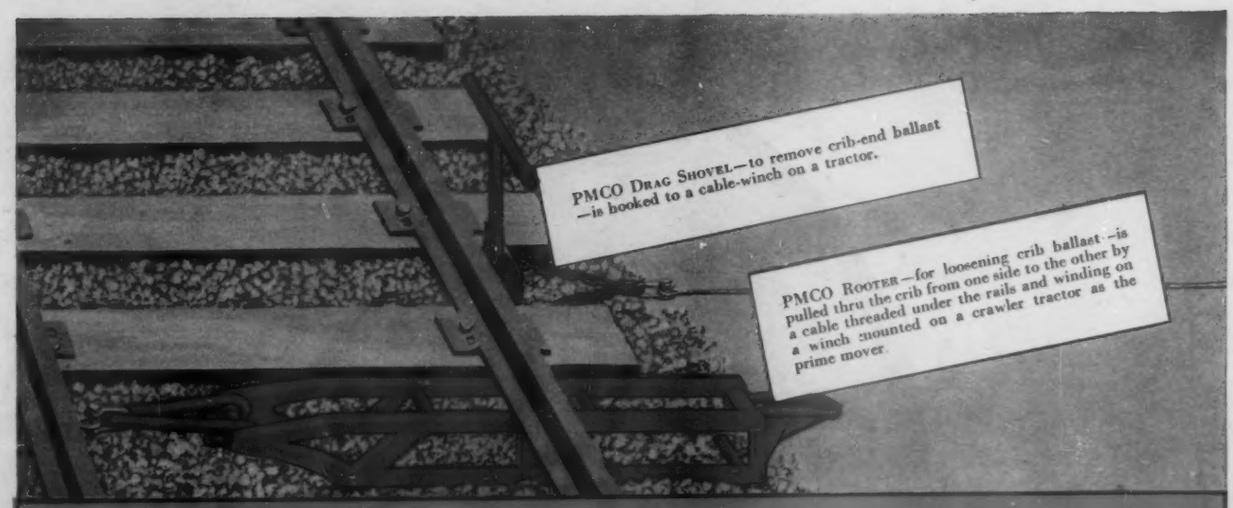
PMCO Drag Shovel—to remove crib-end ballast —is hooked to a cable-winch on a tractor.
PMCO Rooter—for loosening crib ballast—is pulled thru the crib from one side to the other by a cable threaded under the rails and winding on a winch mounted on a crawler tractor as the prime mover.

APPLY MODERN EARTH MOVING METHODS IN SKELETONIZING TRACK

The New

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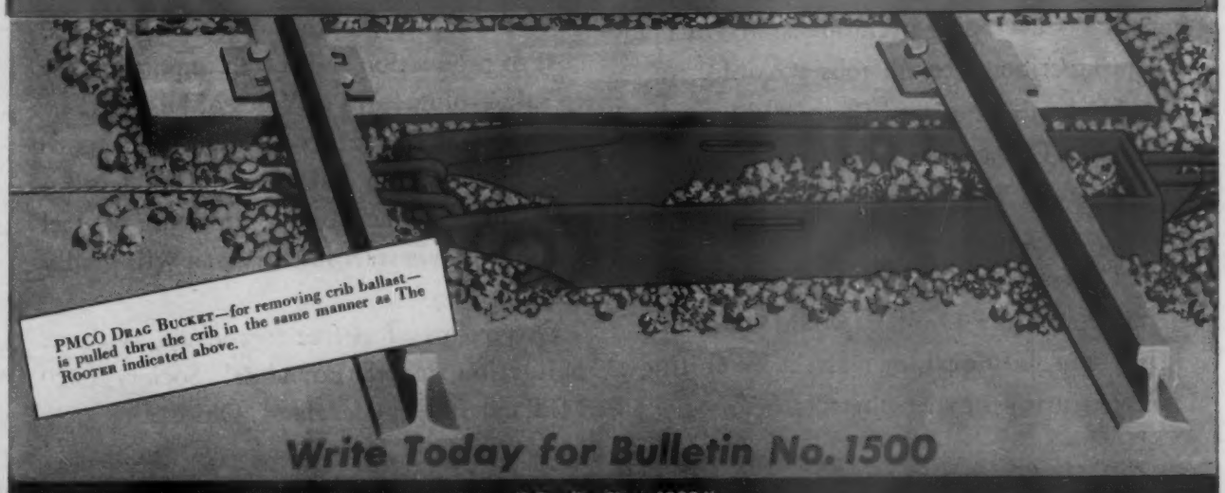
Saves $1,000 *per mile*

$100,000 *per* 100 *miles*

Eliminates (pick and shovel) hand methods
Eliminates monotony and drudgery of hand cribbing
Maintains satisfied crews
Speeds up skeletonizing 500%



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Your steel foundry no longer hesitates to say, "Bring on your next tough job". Research is constantly adding to broad experience and developing techniques that make the production of tough jobs possible.

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Imagine what a job it would be to cut this from solid metal, or make it by uniting together many smaller units!

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Or you may feel free to consult, without obligation, Steel Founders' Society, 920 Midland Bldg., Cleveland, Ohio.

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....through

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The draftless distribution of the conditioned air on the Seaboard Air Line Railway's "Silver Meteor" is just as precisely determined by ANEMOSTAT air-diffusers . . . as is the route of that train determined by the rails it travels.

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Years ago ANEMOSTAT pioneered during the introduction of air-conditioning into railway cars . . . engineered the solutions of air-distribution in cars . . . designed and patented the many successful ANEMOSTAT air-diffusers which *prevent* blasts of hot or cold air on railroad passengers—and yet deliver air-comfort at every seat, throughout every compartment, in every nook and crany of the cars.

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Many discharged war veterans received valuable technical and specialized training. Always consider veterans when you employ. They did their share —now let's all do ours!

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ANEMOSTAT CORPORATION OF AMERICA
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. . . Planned and engineered to do YOUR FINISHING JOB with utmost Efficiency

No matter what your finishing requirements may be . . . no matter what shape or size your product may be, the Mahon organization is prepared to produce for you the most efficient installation obtainable. This statement is supported by over twenty-five years of pioneering in this field, involving research, development and coordination of machines and methods, and is backed up by hundreds of installations all over the world—installations that are now serving every industry where finishing constitutes a major production operation. The resultant wealth of technical knowledge and practical know-how that go into the planning and engineering of each Mahon installation is not available to you elsewhere . . . consultation with Mahon engineers will not place you under obligation.

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Engineers and Manufacturers of Complete Finishing Systems including: Metal Cleaning Machines, Rust-Proofing Machines, Dry-off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Units, and Drying and Baking Ovens. Also Paint Sludge Reclaiming Units, patented Hydro-Foam Dust Collecting Systems, and many other Units of Special Production Equipment.

MAHON

CASE HISTORIES PROVING THE POWER OF THE PRESS

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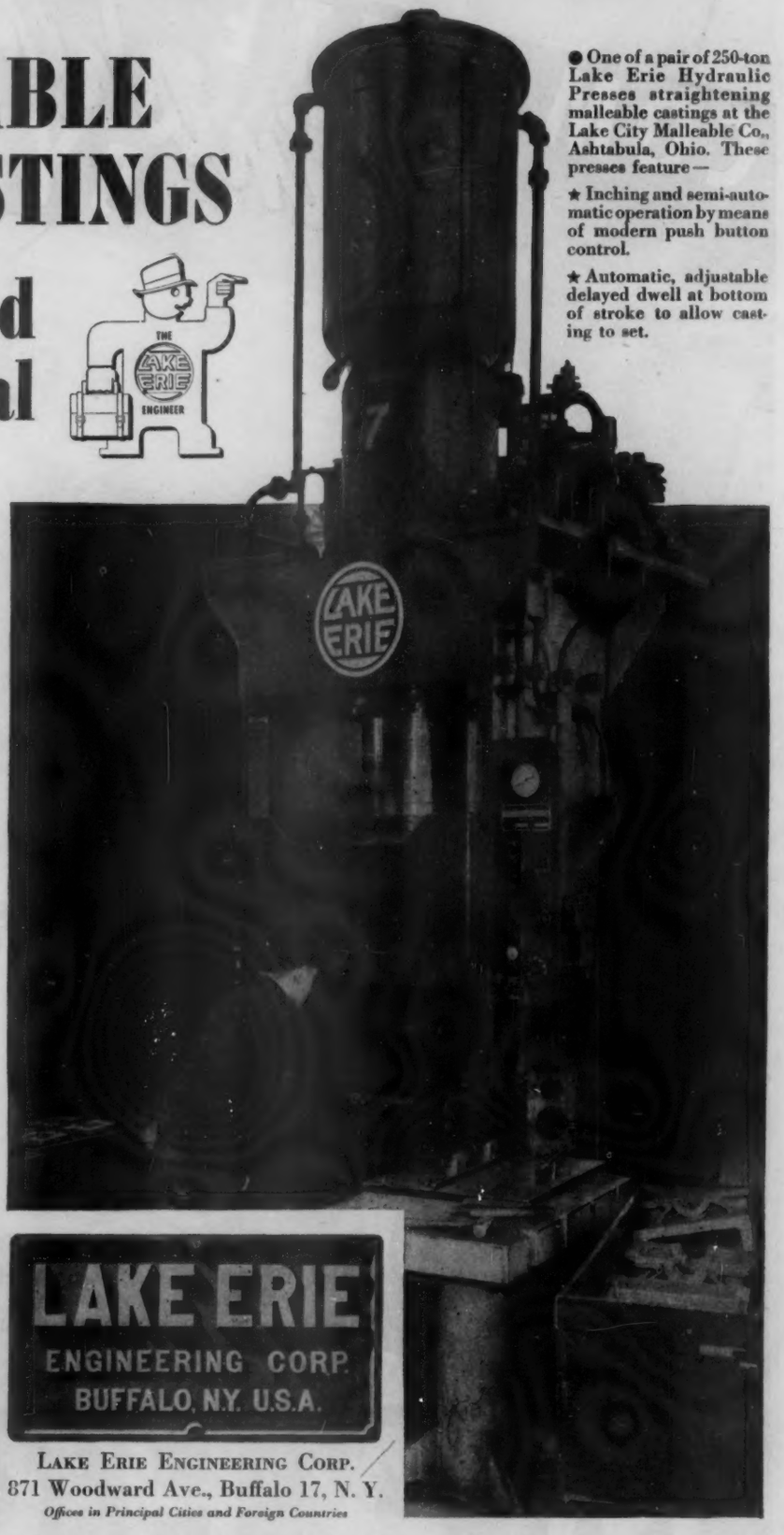

● One of a pair of 250-ton Lake Erie Hydraulic Presses straightening malleable castings at the Lake City Malleable Co., Ashtabula, Ohio. These presses feature—

★ Inching and semi-automatic operation by means of modern push button control.

★ Automatic, adjustable delayed dwell at bottom of stroke to allow casting to set.

The Lake City Malleable Company, Ashtabula, Ohio, reports that its Lake Erie Hydraulic Presses are "...fast on production...turn out high quality work...give dependable performance...and are low on maintenance costs." These favorable experiences of the Lake City Malleable Company are typical, because Lake Erie Hydraulic Presses are designed and built to bring you these important advantages:

- Full automatic and semi-automatic operation increase production... bring production costs down.
- Quick, easy set-up cuts idle time to a minimum...saves money... gives an extra boost to production.
- Precision pressure control and accurate timing produce products of uniform high quality...reduce rejects...save waste.
- Built-in dependability keeps Lake Erie Hydraulic Presses going... keeps production rolling.

Lake Erie Engineering Corporation is equipped through long years of experience to meet your hydraulic press requirements exactly...quickly ...usually with a standard model... but with a special model if necessary. Let us know your requirements... consult us today.

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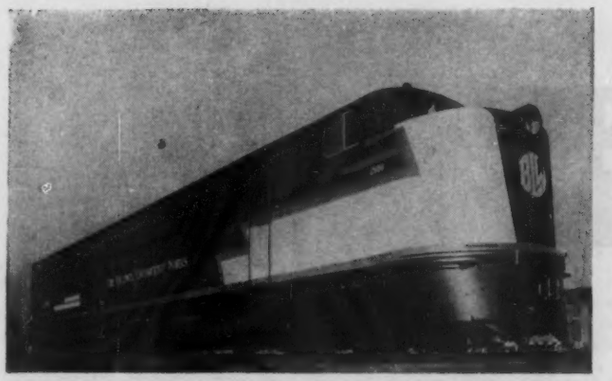

KOPPERS

HELPS KEEP DIESELS AND STEAM LOCOMOTIVES IN SERVICE LONGER

The American Hammered Piston Ring Division helps railroads cut down the time taken out for ring maintenance and replacement. One railroad reported a diesel equipped with American Hammered rings which has run 440,000 miles without an overhaul for ring changes. American Hammered Piston Ring Division's Porous-Krome* Process has doubled and redoubled ring life.

* VAN DER HORST PROCESS

Have your roofs been neglected during the war? Hundreds of roofs have not been adequately inspected during the war years and may now need serious repairs. It might pay you to look at your roofs now. If they are in bad shape, remember that you can get, on a reroofing job, the same good long-lived Koppers Coal Tar Pitch used on new construction. Coal tar pitch roofs have set records for durability and low maintenance.

←

Pressure-treated flooring lasted 14 years on this car. This railroad car—built in 1930 with pressure-treated flooring—rolled into the shop for its first flooring repairs in 1944. Experience showed that pressure-treated lumber gave about three times the average service of untreated flooring. So, of course, another treated floor was installed. The extra cost of pressure-treatment is recovered in less than two years of added service. After that, pressure-treated flooring pays "dividends" for the rest of its long life. And direct savings in maintenance costs are importantly supplemented through relief of overworked shops and by added car earnings. Let us send you the Koppers data sheet on pressure-treated car lumber.

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new 7" low height—30 ton capacity for spotting under spring bracket of side frame. Also for lifting trailer trucks. Lock nut insures safety.

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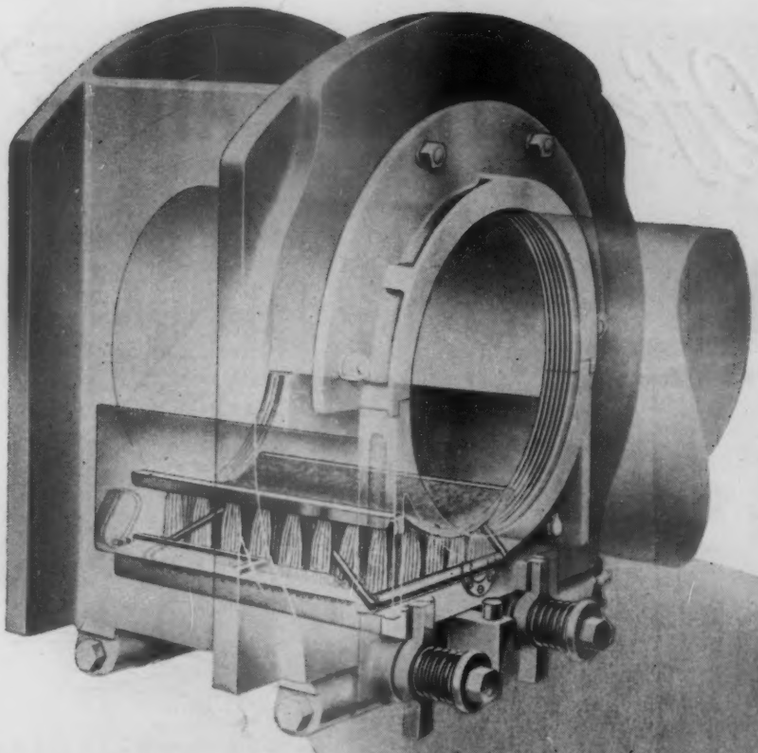


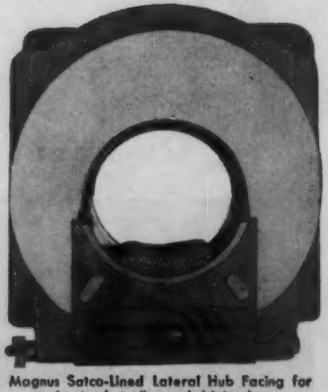
Clean Oil

Magnus Locomotive Journal Oil Lubricator **acts as a filter. Oil climbs the absorbent wicking by capillary action, leaving dirt and abrasives in the bottom of the box. ¶ The compact lubricating pad, held snugly against the journal, assures a constant supply of clean oil. There are no waste grabs or lint wipers. Further details will be furnished on request.**

SATCO Bearing Metal

MODERN HEAVY DUTY BEARINGS

MAGNUS METAL CORPORATION
CHICAGO NEW YORK

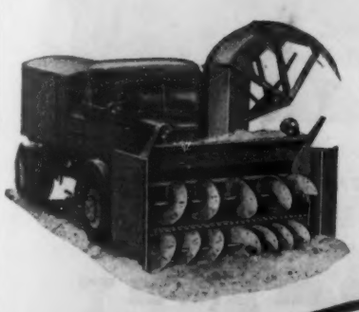


Magnus Satco-Lined Lateral Hub Facing for engine-truck, trailer and driving boxes.

in **60** *minutes*

**Hard Coal Cars*

—Snow Blocked Yards Can't Happen WITH SICARD SNOW BLOWERS

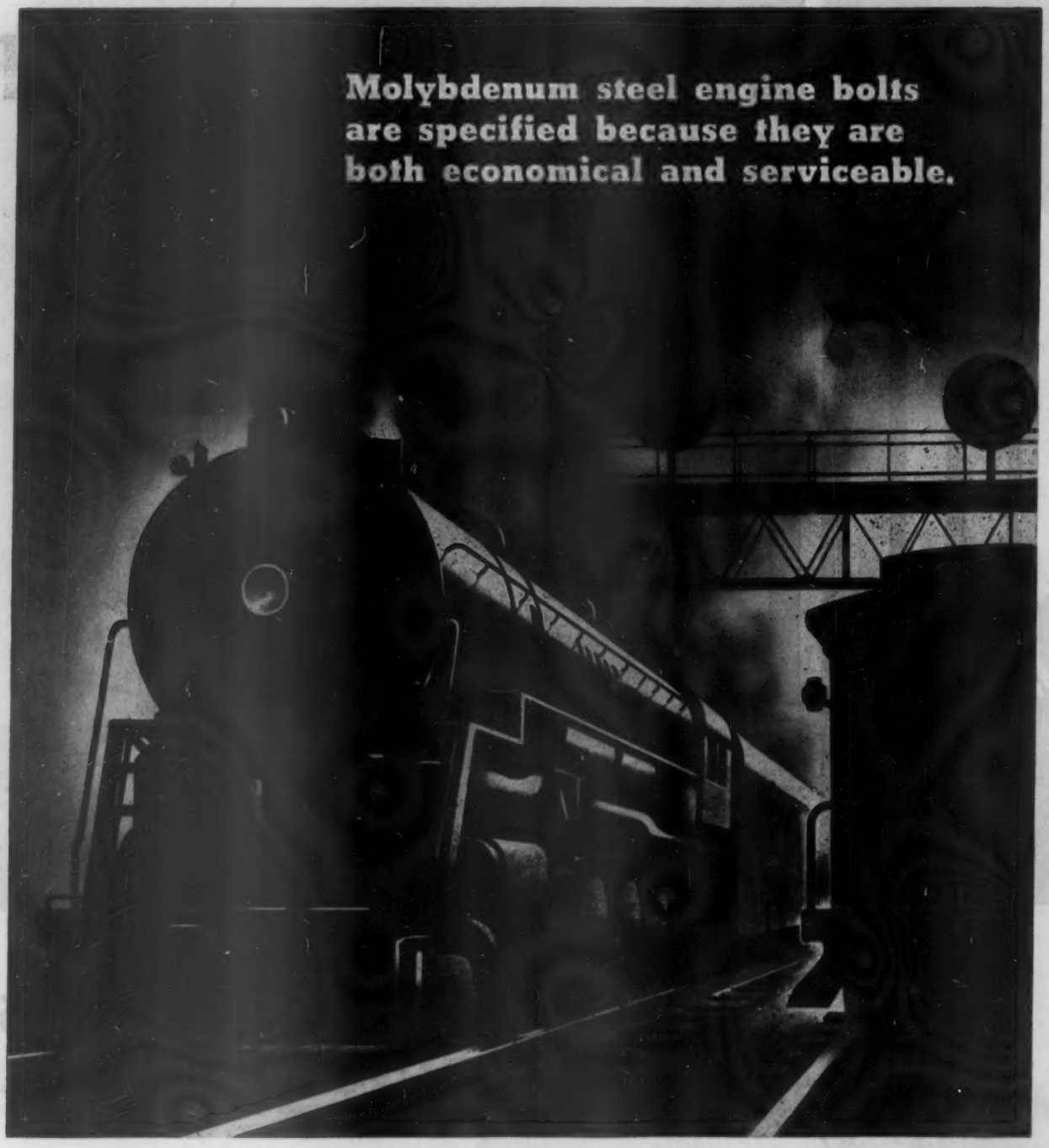


The SICARD SNOW BLOWER is a self-propelled unit fitted with caster wheels for use on rails, and with standard truck wheels and tires for highways. It meets the two most important requirements of winter yard maintenance . . . rapid clearance and low cost operation.

SICARD engineers have developed this unit to achieve the simplest, sturdiest type of mechanism. The impeller blades slice easily through any snow, wet or dry, impacted or loose. The telescopic and revolving ejection chute is fully adjustable from inside the cab for loading right or left, or blowing any distance up to 125 feet.

The SICARD SNOW BLOWER has real money saving possibilities in winter yard maintenance. Write us.

SNOW BLOWERS



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MOLY

The Finest Cars Deserve the Most Dependable Under-car Drive

"Just like home" is more than a mere catch phrase when it comes to describing luxury cars like the Living Room Car. Its ample room, the casual arrangement of its comfortable furniture, and its colorful artistic decorations will give travelers a feeling of home comfort never before achieved in railroad equipment. Farsighted railroad car designers know, though, that without adequate lighting and proper air conditioning all these comforts and conveniences would fail to "sell" these cars to tomorrow's traveling public. They know the under-car drive must be thoroughly dependable. That's why more and more leading railroad car designers and managements are specifying Dayton "D-R" V-Belt Axle Drives . . . why more than twice as many air-conditioned cars are equipped with Daytons than with any other type of under-car drive. A Dayton railway specialist will gladly help you solve your under-car drive problems. Write

THE DAYTON RUBBER MANUFACTURING COMPANY
DAYTON 1, OHIO

Railroad V-Belts by

Dayton Rubber

Advantages of the Dayton "D-R" V-Belt Axle Drive

1. Quiet and smooth performance with high availability—in 15 years a mechanical failure due to V-Belts has never been reported.

2. Provides a flexible, cushioned connection between the car axle and the driven unit that protects generators and other equipment should a mechanical failure occur.

3. It is convenient and economical to install . . . no complicated or expensive truck changes are necessary . . . no special axles are necessary.

4. Duplicate equipment is not necessary to take care of emergencies—when wheel changes must be made, only the axle pulleys need to be removed.

5. It greatly reduces maintenance cost on mechanical equipment as well as on the drives themselves.

6. It imposes a minimum weight on the car axle.

7. It is easy and simple to install, safe and dependable in operation, and insures uninterrupted performance.

On the track, too

it should be an Air brake

THREE quarters of a century have brought no satisfactory substitute for the *air* brake in railroad service.

Only *air* provides braking power with the necessary combination of firmness and resilience; only air can be varied with the requisite ease and precision; only air is so nearly independent of weather and temperature.

You can have these same advantages in Car Retarders—if you specify "Union," for "Union" Car Retarders are *Electro-pneumatic*. The "Union" Retarder is essentially an air brake, located along the track instead of on the car; controlled by an operator in a tower, instead of by the engineman.

Remember, though, that you get these advantages only in "Union," for *only* "Union" Car Retarders are Electro-pneumatic.

For full information, consult our nearest district office or write for "Union" Bulletin 155.

UNION SWITCH & SIGNAL COMPANY

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO

The Week at a Glance

COMPETITORS' PLANS: The air lines have hired New York's ex-comptroller to "study" the airport facilities of some selected cities with an idea of working out arrangements for joint operation of ground facilities, such as baggage handling, servicing planes, and provisions for loading and unloading passengers, so that expenses can be cut. As pointed out in a news item herein, this is only one phase of the air lines' plans for making friends of their customers. Another is a scheme for obtaining immediate confirmation of return-trip reservations, to be accomplished by setting aside blocks of space to be drawn on by origin points as required.

●

NO CONFLICT: It's all right with the Federal Communications Commission to give the I. C. C. regulatory control over railroad train-communication systems, provided the F. C. C.'s permit and license requirements are complied with, according to Chairman Porter of the communications commission, whose statement to Senator Wheeler on that subject is reported in this issue's news pages.

●

EXCEPTIONAL: A Class I railroad—a relatively short one, to be sure—that is distinctively different from the average in a great many respects is the subject of an article this week on page 273, in which are outlined some of the operating procedures and financial characteristics that are more or less peculiar to it. The R. F. & P. has no branches, no funded debt, has never been through reorganization nor defaulted on its interest payments, and has had only two train accidents resulting in fatalities to passengers in 109 years of operation. Its entire line is multiple-track and equipped with automatic train control and automatic signals. During the year 1944, trains started out over the road, on the average, at the rate of one each 14 min. Mallets are used as hump engines in its principal yard. This is only the beginning of the catalog of this bridge line's enviable specifications.

●

ALUMINUM HOPPERS: A weight saving of 13,000 lb. per car over the A. A. R. standard 70-ton steel hopper car has been obtained with an aluminum alloy design turned out for the Missouri Pacific by A. C. F. The illustrated article herein describing these cars emphasizes the longer life and reduced maintenance expense expected from the use of the corrosion-resisting magnesium-silicide alloys that show little reaction to high-sulphur coals.

●

CONTRADICTIONS: The economic objectives of the administration's program (as set forth in the President's message to Congress) are mutually exclusive, an editorial in this issue points out, in that it appears to be designed to bring about at the same time deflationary action on prices and inflationary additions to the purchasing power of substantial groups of consumers—particularly those organized to make their voting power effective. And the current drive of organized labor, including the railroad brotherhoods, for higher wages likewise is part of a program which has mutually exclusive objectives, namely, wages that are constantly increasing (in dollars) and economic security for the individual. The backbone of the individual employee's "security" is his prospective pension, payable in dollars. The inevitable result of higher wages is higher prices, that is, dollars that are worth less, measured in purchasing power. So the union member can have higher wages now or his anticipated degree of "security" later, but not both.

●

THE MISSING ELEMENT: Despite the fact that economic conditions now are particularly favorable to a period of widespread prosperity, many people in business and in public office are dominated by a depression complex. There have never been such huge shortages of things people desire and need. There has never been such capacity for construction, production and transportation. There has never been such a tremendous accumulation of purchasing power in the hands of industries and individual consumers. Nevertheless many people are uneasy, many businesses hesitate to make commitments commensurate with their opportunities. The missing element, as pointed out by the editor of this paper in a recent address, appearing on page 277, is *confidence*, that is, confidence in the opportunity to make profits.

●

A WAY OUT: Lack of confidence in the opportunity to make profits results, it is demonstrated in this discourse, from the relentless attack on the profit system from two sides, both captained by energetic and resourceful leaders. One drive to prevent business from making the profits that are its lifeblood is organized labor's demand for higher wage rates and more featherbedding. The other is the government's apparent determination to curtail—if not to eliminate—profit from business transactions by such devices as price controls and subsidized competition. Granted that such erosive influences may well undermine the confidence of business in the future, it does not follow that there is nothing that business can do about it. Business can forget its intra-mural bickerings, present a united front against these attacks, and make every effort to defeat the legislative program on which the "liberals" expect to base their "abundance for all" economy of national socialism.

●

A RAILROAD AT WAR: Some of the jobs the Missouri Pacific did during the war are reported in a feature article this week. Among other undertakings were the development of a concentration yard for explosives, the institution of symbol oil trains, and the overnight expansion of physical facilities to handle troop movements at a rate beyond all previous experience. In meeting these demands this road only did what other roads did under the situations peculiar to them, and this account is presented as a small segment of a story that would require vast space for a complete recounting.

A REAL ACCOMPLISHMENT: An example that can have far-reaching consequences in the development of more harmonious labor-management relations in all industry has been set in the railroad industry by the agreement between the companies and the unions representing an overwhelming majority of the employees to submit their current wage dispute to arbitration, both sides being bound to accept the settlement thus reached. As the leading editorial this week points out, voluntary arbitration, as effected under the Railway Labor Act, is superior to any other method of settling labor disputes. The statesmanlike decision of the railroads and their employees to resort to this constructive procedure at a time when industrial strife has spread so alarmingly is one that should influence other unions and other employers. It is even conceivable that the politicians might find in it a way out of some of the dilemmas that have been vexing them.

●

MAINTENANCE RESEARCH: Through engineering research and engineering development much has been done to improve tracks and structures, but the Southern's J. B. Akers has pointed out in a recent address—abstracted herein—that there is much more to be accomplished through comprehensive programs particularly directed toward the perfection of materials and methods in this field for the competitive era ahead. Such matters as tie plate design, welding technique, shelly failures of rail and advances in tie treatment come in for discussion.

●

PROPAGANDA: The truckers are still at it. Their currently circulating "educational" propaganda, blandly ignoring actualities, continues to enlighten the uninformed with such demonstrably misleading statements as that contending there are 50,000 communities in the United States without railroad service—dependent, that is, one is expected to understand, almost entirely on highway transportation. But no definition of "community" accompanies these "revelations." The truth is, as has been stated in these pages before, that a very substantial number of the "communities" so referred to actually are real estate subdivisions, post office substations within cities, and other localities that are no more than conveniently partitioned "neighborhoods" within a single governmental or territorial entity. But 50,000 *is* a nice round number.

●

BRIEFLY NOTED: The St. Lawrence ditch has bobbed up again on the list of Senate committee hearings, being scheduled now for February 18. . . . The Lackawanna's William White says lower passenger fares and higher freight rates are essential to the railroad industry's good health. . . . The I. C. C. is requiring several roads to show cause why they should not install block signal operation on lines where train accidents have occurred. . . . Remodeling of Detroit's Fort Street station is getting under way.

HYATT RENEWS ITS PLEDGE OF COOPERATION

At this beginning of our first year in the new peace, Hyatt joins with Industry—and the whole world—in deepest gratitude to the men of our armed forces for their service and sacrifice in achieving a glorious triumph. On behalf of mankind, Hyatt thanks Industry for the tremendous production job that made the United States the arsenal for victory. For itself, Hyatt thanks Industry for the patience and understanding that eased the difficult period from which we are now emerging.

As Industry turns again to design and manufacture of the machines and implements of peace, Hyatt renews its pledge of cooperation. Hyatt has developed new techniques during the war—in the construction of higher precision bearings and in their application—and we invite Industry to use this advanced knowledge. Realizing that anti-friction bearings will be in greater demand, Hyatt has increased production facilities in readiness.

This collaboration which now resumes between Industry and Hyatt assures equipment of efficiency and dependability that will set new standards for the world. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.; Chicago, Detroit, Pittsburgh, Oakland, California.

HYATT ROLLER BEARINGS

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette, and the Railway Age-Gazette. Name registered in U. S. Patent Office.

Vol. 120 February 2, 1946 No. 5

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Too many business people "fall" for political handouts, not being smart enough to penetrate the socialist strategy of "divide and conquer," to which industry is succumbing piecemeal.

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RAILWAY AGE

Railways and Unions Set an Example

The agreement made by the railroads and 18 labor unions to arbitrate the demands of these unions for advances in wages is an important development. It signifies that the Railway Labor Act is being revived as a means of settling labor disputes.

Only Two Hold-Outs

There were virtually two disputes between the railroads and 20 unions. One was regarding wages, the other regarding working conditions and rules. The 18 unions have agreed to arbitrate their wage demands, thereby holding in abeyance their demands for changes in working conditions and rules. These 18 include 15 unions of non-operating employees and three unions of operating employees—Brotherhood of Locomotive Firemen & Enginemen, Order of Railway Conductors and Switchmen's Union of North America.

Two unions of operating employees—Brotherhood of Locomotive Engineers and Brotherhood of Railroad Trainmen—have refused to have wages determined separately from rules, and are taking strike votes. Probably their disputes with the railroads will be submitted to a fact-finding board appointed under the Railway Labor Act by President Truman. As the wages of members of 18 unions will be determined by arbitration, there is no likelihood that the other two unions will strike. But a fact-finding board would have to pass on demands made by these two unions for very expensive new "featherbed" operating rules. Hence, its findings and recommendations might be very important because of their bearing on changes in rules demanded by all the five unions of operating employees, the granting of which it has been estimated would alone increase railway labor costs $750 million annually.

Arbitration's Results Are Binding

The Railway Labor Act provides for, first, collective bargaining; second, mediation; third, arbitration by agreement of the parties; fourth, fact-finding by boards appointed by the President. If a dispute is voluntarily submitted to arbitration, the award made by the arbitration board is conclusive and binding, being enforceable in the federal courts. Collective bargaining and voluntary arbitration are not essentially different, as a settlement by either of these means is a result of agreement by the parties to a dispute on how it shall be settled.

Voluntary arbitration has a long history on the railways. Its use under the Erdman and Newlands acts resulted in numerous peaceful settlements before World War I. The Railroad Labor Board, a permanent body containing representatives of public, railways and employees, was created by the Transportation Act of 1920, and effected some important settlements. But its awards were not binding; soon both some railways and some unions began virtually ignoring it; the shop crafts carried on a nationwide strike against one of its awards in 1922; and it was abolished by the Railway Labor Act in 1926. Several peaceful settlements were effected by collective bargaining, voluntary arbitration and fact-finding boards under this law; but it seemed to have been given a death-blow when the labor unions rejected recommendations of fact-finding boards in 1941, and again in 1943, and in both instances President Roosevelt intervened and got the unions larger advances in wages than boards appointed by him had recommended.

Voluntary Arbitration a Superior Device

It is highly gratifying that in the midst of a period of almost unprecedented industrial strife the railways and unions representing an overwhelming majority of railway employees have reverted to a sane and peaceful method for settling disputes of major importance. There is no other method of settling labor disputes for which so much can be said as *voluntary* arbitration. It excludes such collusion by employers and employees to exploit the public as sometimes has influenced settlements by collective bargaining. It excludes such exertion of influence by politicians for their own selfish purposes as repeatedly has been witnessed under the Roosevelt and Truman regimes. It establishes a forum in which the parties to a dispute can publicly present any and all data and arguments they may see fit in support of their respective positions. And, under the Railway Labor Act, it results in conclusively settling a dispute.

The railways and 18 of the unions representing their employees have set an example which should strongly influence other employers and labor unions, and also Congress in its consideration of new labor legislation.

Wage Inflation Reduces Pensions

In the annual Presidential message to Congress, Mr. Truman revealed that he is worried over two forces which, he fears, may act as deterrents to maximum production and prosperity. One of these forces—he calls it his "chief worry"—is inflation. "Even with maximum encouragement of production," he goes on to explain, "we cannot hope to remove scarcities in a short time. The most serious deficiencies will persist in the fields of residential housing, building materials and consumers' durable goods."

The other Presidential worry is that politically-powerful organized labor will not have enough "purchasing power" to absorb the products of industry; hence he favors substantial wage increases to add to the purchasing power of this numerous bloc.

His diagnosis is, thus, that there is both too much purchasing power in the hands of consumers, in relation to the supply of goods (i.e., that the economy is suffering from inflation) and, also, that there is danger that there will not be enough purchasing power in the hands of consumers (i.e., that the economy is endangered by deflation). This is as if a physician should declare that a patient had, at the same time, both a high fever and sub-normal temperature; the diagnosis could not possibly be accurate in both its parts.

Careful reading of the Presidential message reveals that, probably, what Mr. Truman has in mind is that too much purchasing power in the hands of consumers, in relation to the supply of goods, is the immediate danger, while inadequate purchasing power in consumers' hands, in relation to the volume of production, may soon develop. Neither Mr. Truman nor anybody else, however, contends that consumer purchasing power in a degree necessary to sustain production at a high level is lacking at the present time. The only excuse that can be offered for insistence that wages be increased *now* is that reduction in consumers' power to absorb the products of industry may arise at some time *in the future*. Insistence that wages be increased now simply means that the inflationary demand on the existing inadequate supplies of goods is to be dangerously augmented in order to correct a hypothetical inadequacy of demand which may arise at some future time.

It is as though a patient suffering from gout and obesity were being plied with rich food, for fear lest, at some future time, he might contract tuberculosis or some other wasting disease. The treatment, because of its faulty timing, could be of no help in the cure of the ailment which had not yet developed—while it would certainly be harmful, and possibly fatal, in the case of the malady from which the patient was actually suffering. The charitable assumption regarding Mr. Truman's economic reasoning is that it is not intended by him to be anything more than a vote-catching political stratagem.

Mr. Truman is not, however, the only leader in public life, who is striving for economic objectives which are mutually exclusive. The whole union labor movement is suffering similarly in its simultaneous pursuit of (1) constantly rising money wages and (2) "economic security" for the individual worker. Such "economic security" can be expressed only in terms of a fixed sum of money, as, for instance, a pension payment. The railway union leaders are representing men, many of whom in the course of the next few years will be entitled to pensions ranging upward to $120 per month.

A pension of $120 will, even now, buy only about $90 worth of consumers' goods, at pre-war prices. That is, the cost of living has gone up about one-third since 1939, despite all the efforts of Chester Bowles and his predecessors and despite the fact that during the war wage increases were "frozen", at least in part, by the "Little Steel formula."

There are a lot of old-head railroaders, now lending their support to wage increase demands which, if granted, will inevitably push the general price level still further upward. If wages are going to go constantly up, then pensions, measured in purchasing power, are going to go constantly down.

Sharply rising monetary wages are one thing, and a reliable income for old age is quite another. Organized labor can have one or the other of these objectives, but it cannot have both of them, any more than Mr. Truman can achieve simultaneously, both deflationary action on prices and inflationary additions to "purchasing power."

Better Concrete

In the light of the outstanding advances that have been made over the years in the manufacture of portland cement and in the art of mixing, placing and curing portland cement concrete, it is amazing that there still exists in the minds of many users of concrete such uncertainty as to the quality of the end product.

When the subjects committee of the American Railway Bridge and Building Association was selecting topics for consideration by committees during the current year, one of those that stood out and remained near the top of the list throughout its discussions had to do with methods of improving the strength, durability and wear resistance of concrete. This is only one of many recent manifestations of the concern among the users of this essential construction material as to their ability to produce in their structures concrete that will stand the test of time and service, without at least defacing surface failures.

So many factors enter into the manufacture of concrete, the disregard of any one of which can affect the final product adversely in one way or another, that it would be impossible to attempt to discuss any number of them here. Two, however, of a fundamental nature, are of such importance as to call for comment. One of these is the prevalent lack of knowledge or clear understanding of much of the basic information that is available on the subject of concrete manufacture, and the other is the hesitancy, if not refusal, on the part of some to accept advances in the art, even though their merit has been demonstrated beyond question.

As to the former, such lack of knowledge is understandable because of the nature and scope of the subject involved and the vast amount of literature that has been issued relating to it. While concrete of a type can be mixed and placed even by one entirely ignorant

of the product, it is becoming more and more evident that the strength, durability, wear resistance, or any one of the other important characteristics sought in any particular concrete, cannot be obtained to the extent desired except by those with full knowledge of what it is all about—knowledge that can be obtained only by a clear understanding of the basic principles involved, of the character and quality of all of the ingredients that are to be used in any particular mix, and of the conditions under which the material is to be placed. Unfortunately, it cannot be said that everyone on the railroads in charge of concrete design and manufacture has this knowledge. Still more important is the fact that some of those with the responsibility do not recognize the necessity for this knowledge, but continue to put reliance on rule-of-thumb methods, and resist acceptance of advances in the art that have demonstrated themselves beyond question.

One form of this resistance is against the use of any so-called admixture, an attitude which has its origin to a large extent, no doubt, in the exaggerated claims that have been made for some of these products in the past, which have not materialized in actual use, and the general belief that such additions to a mix increase the cost of the final product. To fail to recognize the possible value from the use of certain alloying ingredients in concrete is as foolish as to deny the character-improving qualities of alloying ingredients in the manufacture of steel, just because some of them have failed to produce the desired results. And as for their increasing the cost of the end product, this has been demonstrated not to be necessary.

It is hardly likely that the committee of the American Railway Bridge and Building Association studying this subject anew can develop any new theories or practices to improve the strength, durability and wear resistance of concrete, especially in the light of the limited facilities and time at its command. On the other hand, this committee can render a valuable service if it will awaken among members of the association and others new interest in some of the sound principles that have been established over the years, and will help create a greater degree of open-mindedness toward certain recent developments in the art.

Prospective Air Competition

The commercial air lines are prone to exaggeration in their handling of facts and figures. Hence, it has been difficult to ascertain what air passenger transportation is in immediate prospect. Robert Ramspeck, new executive vice-president of the Air Transport Association of America, brought forth the latest batch of figures regarding the air transportation industry in a recent address before the Advertising Club of Washington, D. C.

According to Mr. Ramspeck, there will be three times as many planes in revenue passenger service by January 1, 1947, as there were before the war, and this fleet will have seven times the seating capacity of the pre-war fleet. Prior to Pearl Harbor the domestic air lines had 359 planes available, with a total capacity of 6,250 seats. By next year this will have been increased to 1,239 airliners, and the claim is made that the new fleet will have 49,757 seats and will be capable of handling 10 billion passenger-miles annually in scheduled operations.

The estimated increase in total seating capacity will be due to an increase in present average capacity per plane from 21 seats to 50 seats. The number of passenger-miles flown will be increased not only by these two factors, but because the new planes will travel at average speeds of 250 to 300 miles per hour, as compared with the average pre-war speed of 180 miles per hour. Mr. Ramspeck gave no figures regarding the expected number of route-miles to be flown. However, during 1945 an addition of 4,042 route-miles was made by domestic carriers, bringing the total number of route-miles available for the transportation of passengers, air mail and cargo to an all-time high of 66,979 miles.

These figures indicate that air competition will soon be severe and that the railways have been well advised in their recent large purchases of passenger equipment. They must enter upon the improvement of their passenger equipment and service whole-heartedly if they are to meet air competition. Half-way measures will not serve.

President Truman's Labor Message

Instead of building up the power of government over labor unions, we should build down the power of labor unions over government. President Truman has acted with courage, but it is not likely that his course will long please anyone, himself included. He wants the fact-finding machinery of the Railway Labor Act applied to big industry—steel, petroleum, automobiles, etc. On the face of things, this looks smooth and shiny, but below the surface there are vital differences.

The railroad labor brotherhoods are old in the game; their leaders are experienced, responsible and American. None, like Reuther of the Automobile Workers and Hillman of the C. I. O., served an apprenticeship in Russia. With few exceptions, railway labor believes in our way of life; they have often put their weight behind management to improve the railroad picture, even though they "featherbedded" their own nests.

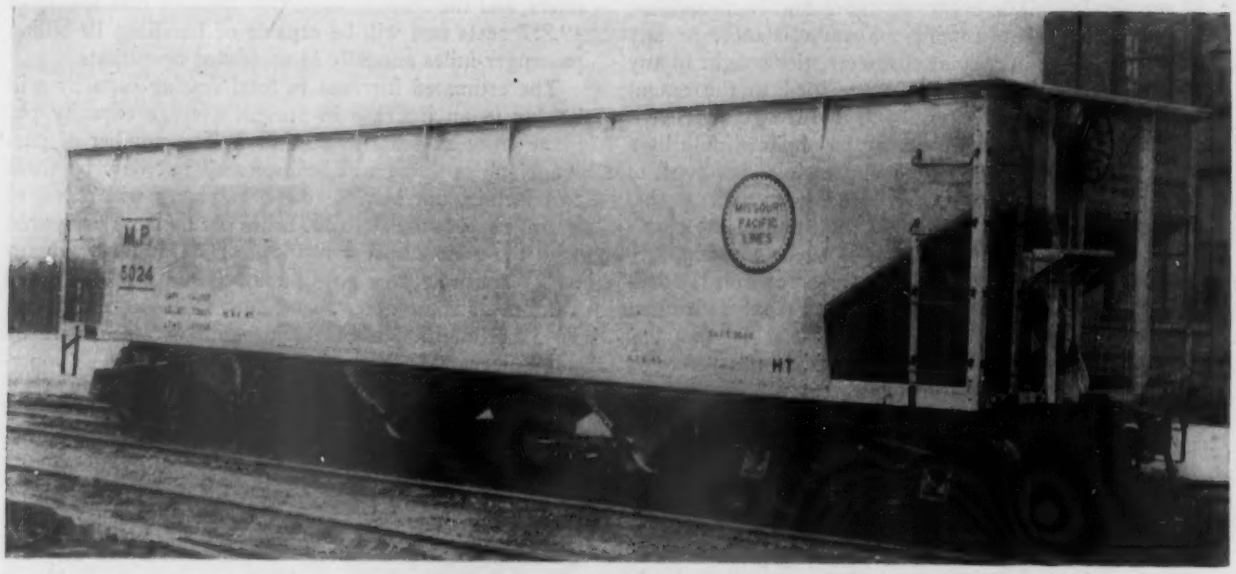
In addition, the railroads are public utilities. Their prices (freight and passenger rates) are controlled by the Interstate Commerce Commission. The trains must run. They cannot postpone their service. Hence, railway management has little or no option to reject the end result of the Railway Labor Act, whatever it may be.

Nor has the Act been a howling success from the standpoint of fairness and impartiality. Quite the contrary. Most of its fact-finding boards have been pro-labor and were intended to be. If they didn't give labor all it wanted, labor appealed to the White House or to Congress to get the verdicts rewritten upward.

A railway strike was threatened two years ago. We witnessed the unedifying spectacle of President Roosevelt and Congress acting to overrule the decisions of the presidential boards and of Economic Stabilizer Vinson himself. Has the country so soon forgotten that Mr. Truman, then Senator, himself introduced a bill to *legislate* a wage increase, thus overruling the fact-finding agencies? In short, another political answer to an economic problem. His bill passed the Senate but died in the House because by then the matter had been settled.

Does Mr. Truman, as President, think that other Senators will not follow the precedent which he established as Senator? It is a vain hope.

—Samuel B. Pettengill



Missouri Pacific 70-ton aluminum hopper car

Missouri Pacific Aluminum

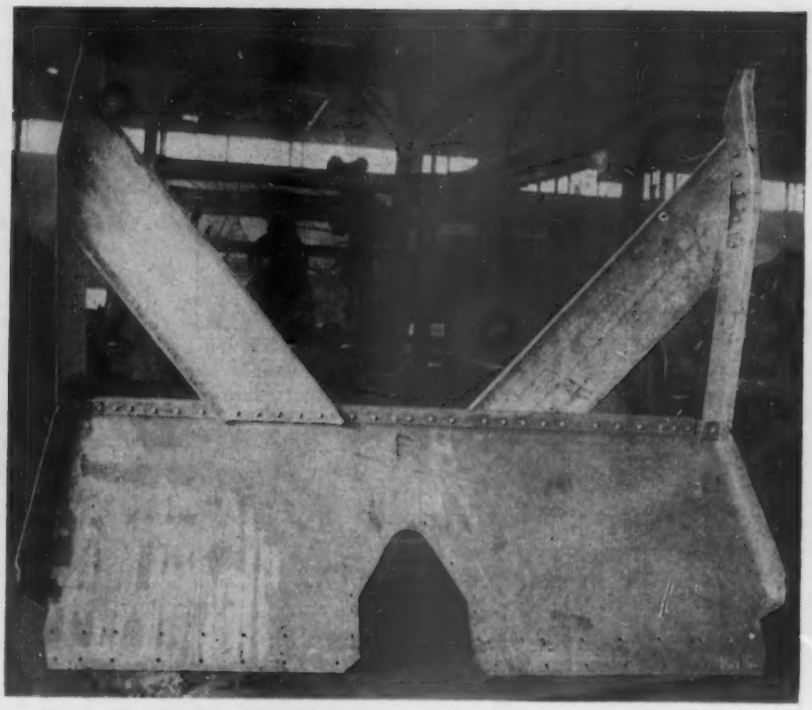
THE Missouri Pacific has placed in service twenty-five 70-ton triple-hopper cars, built by the American Car and Foundry Company of aluminum alloys supplied by the Aluminum Company of America. These are believed to constitute the first production order for cars of this type designed specifically for aluminum construction. The weight saving of about 13,000 lb. a car, as compared with the A. A. R. standard 70-ton steel hopper car, is utilized to increase the payload 6½ tons, this being accomplished by adding 39¼ in. to the length of the car and increasing its cubic capacity 240 cu. ft. In addition to more earning capacity, it is anticipated that the new cars will have the important advantage of longer life and reduced maintenance expense owing to corrosion-resistance properties of the particular type of aluminum alloys (magnesium-silicide) used which have demonstrated exceptional freedom from reaction with high-sulphur coals, such as are likely to be encountered in Missouri Pacific coal service.

The new M. P. aluminum hopper car is 45 ft. ½ in. long over the strikers, 10 ft. 8 in. high above the rail, 10 ft. 4 in. wide inside, and has a light weight of

Looking into the hoppers of the M.P. aluminum car

A weight saving of 13,000 lb. per car permits increased coal loading—Reduced maintenance expense also expected

Hopper Cars



Cross-ridge gusset assembly showing special extrusion used

A Wine cast aluminum-alloy hopper-door frame and dreadnaught pressed door

37,000 lb. which gives a load-carrying capacity of 173,000 lb. As compared with an A. A. R. standard 70-ton steel hopper car, weighing 50,100 lb., there is a weight saving of slightly over 13,000 lb. Relatively lightweight A. A. R. 70-ton hopper cars, embodying welded alloy-steel construction, have been built weighing about 45,000 lb., but even in this case the aluminum car shows a weight saving of 8,000 lb.

Sheet Thickness Maintained

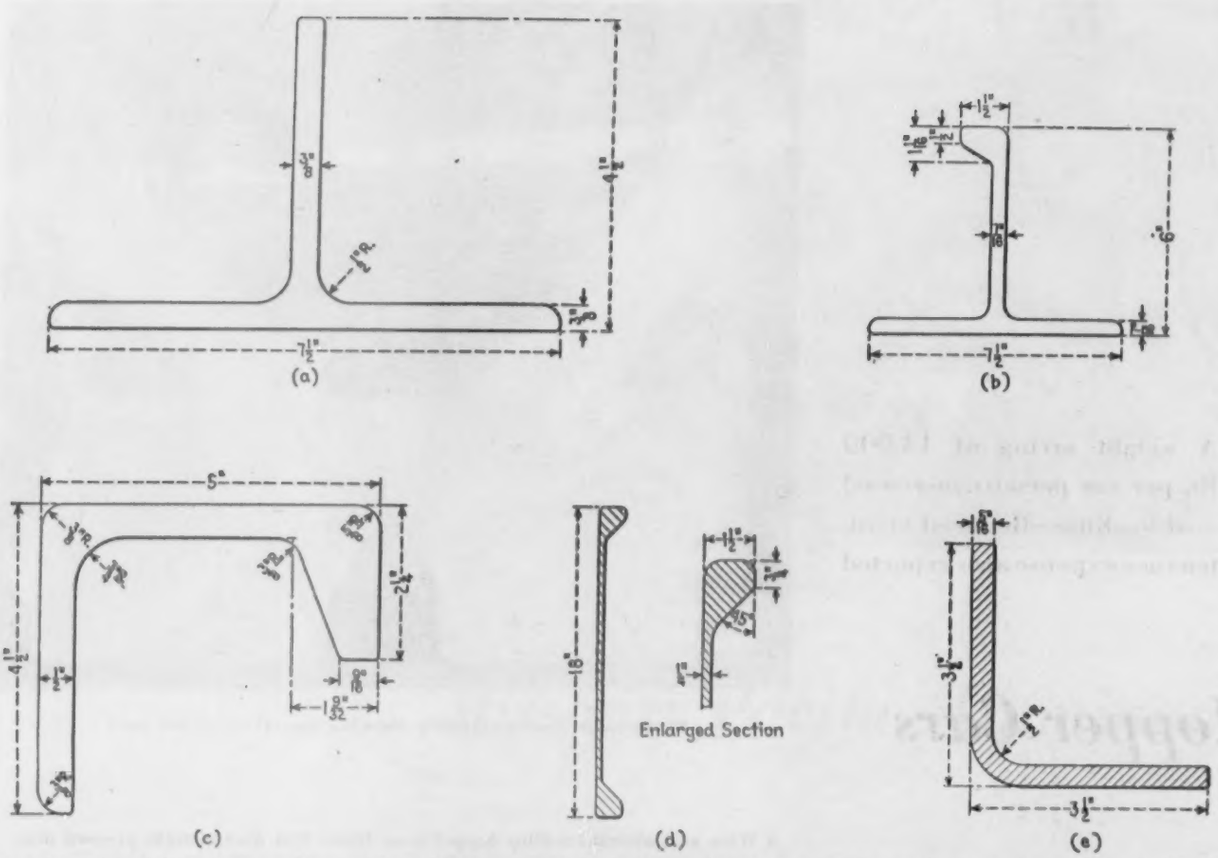
Weight savings in the aluminum car are secured without reduction in thickness of sheets and plates used in the car construction. In fact, the specifications call for the same thicknesses as in the A. A. R. standard steel design. The car sides and ends, for example, are made of ¼-in. aluminum sheets and the hoppers and hopper doors of 5/16-in. plates. The yield strength of aluminum alloys used is 38,000 lb. per sq. in., which gives a high factor of safety in the car design and assures maximum resistance to damage in case of derailment or from careless handling of loading or unloading equipment. Another advantage of the thick aluminum sheets and plates is, of course, longer life from a wear standpoint when abrasive materials are being handled.

The basic design of the aluminum hopper car conforms to that of the A. A. R. 70-ton standard. The entire body is built of Alcoa aluminum alloys except for the center sill and bolsters, which are carbon steel. The trucks and all specialties are made of steel except the Wine door frame, which is a 356-T6 aluminum alloy casting, and the Dreadnaught pan doors, made by the Standard Railway Equipment Company of 61S aluminum alloy pressings, heat-treated after forming.

All formed plates of the car are 61S-W alloy, other sheets and plates being 61S-T alloy. Rolled and extruded shapes are 61S-T and 61S-W alloys. A number of extruded shapes, designed especially for use in this car, are shown in one of the illustrations, and include a cross-ridge post, bolster post, side and end top bulb angle, cross-ridge brace and corner post. In general, all car parts are readily formed cold, using dies changed little, if at all, from those required for steel pressings.

Rivets are 53S-T61 alloy, squeeze-driven cold, or hand-driven hot, heating being accomplished by air-type and contact-type electric heaters. A modified button head is used on the driven end of aluminum rivets. Steel rivets, applied in the usual way, are used to connect all steel car parts.

The total amount of aluminum alloy material used in the 25 cars includes:



Special extruded aluminum alloy sections—(A) cross-ridge post, (B) bolster post, (C) top bulb angle, (D) cross-ridge brace, (E) corner post

Structural shapes, 30,611 lb.; extruded shapes, 48,898 lb.; plate and sheets, 150,643 lb.; bar, 2,469 lb.; rivets, 6,000 lb.; door frames, 9,450 lb.; door pans, 6,300 lb.; total, 251,471 lb.

In addition to specialties mentioned, the 25 new Missouri Pacific aluminum hopper cars are equipped with Miner A-22-XB draft gears, A. S. F. Type-E couplers and Ajax-Consolidated hand brakes. Fifteen cars have Westinghouse and 10 cars New York Type AB empty-and-load brakes which are required because of the low ratio of empty to loaded car.

The cars are mounted on Unit-type trucks with Scullin cast-steel side frames and bolsters, Carnegie-Illinois 6-in. by 11-in. axels and one-wear steel wheels, Cardwell Westinghouse spring snubbers, Buffalo brake beams and Schaefer brake levers. Fifteen cars are equipped with National and ten cars with Magnus plain journal bearings.

The car bodies are left in their natural aluminum finish. The underframes and trucks are painted black.

HUNGRY TRAVELERS.—T. D. Slattery, general traffic manager of British Railways in New York, reports that on the London, Midland & Scottish during 1944, travelers at railway station restaurants consumed 31 million cups of tea, coffee and other hot beverages, 6 million meat pies and 10½ million sandwiches.

* * *

"He asked permission to abandon an unprofitable line, officer, and he fainted when we let him have it, no strings attached."

R. F. & P. Keeps Trains Moving

Modern power and signals aid this strategic line to handle 200 per cent and 700 per cent increases respectively in freight and passenger traffic

DURING 1944 the average freight traffic density on the Richmond, Fredericksburg & Potomac was 34,314 revenue net ton-miles per mile of road per day, slightly under the 1943 figure but 214 per cent more than in 1929, the previous high year. For the same period the average density was 19,871 revenue passenger miles per mile of road per day, an increase of 711 per cent over 1929. In 1944 19,383 passenger trains and 15,734 freight trains were operated to produce transportation totaling 1,419,224,495 revenue net ton-miles and 821,834,548 revenue passenger miles.

As the Allied successes in the European phase of the war became increasingly evident during 1945, the heavy pressure on the R. F. & P., in common with that on other carriers along the Atlantic seaboard, diminished with the result that 1945's traffic was somewhat less than in the preceding year, although still at a high level. Results for the first nine months of last year show a decrease in revenue net ton-miles of 9 per cent, in freight revenue of 6 per cent, in freight train miles of 5 per cent and in freight trains operated of 5 per cent. Freight density for the nine months was 31,864 revenue net ton-miles per mile of road per day, compared with 34,314 for the entire year of 1944.

Passenger traffic fell off even more rapidly, declining 17 per cent both in the number of revenue passenger miles produced and in passenger revenues, while passenger trains operated and passenger train miles dropped only 4 per cent and 3 per cent respectively. Even so, the R. F. & P. remained a busy railroad. During these nine months a total of 27,247 trains were operated, or an average of 99.8 trains per day, a slight decline from the average of 103 trains * operated each day during the previous year.

In 1940 an average of 3,884 passengers were handled each day. At that time passenger traffic volume was subject to violent fluctuations due to the fact that winter travel to Florida and other southern resorts constituted a large part of the total. The heaviest travel occurred in January, February and March, while the months of August, September and October were generally much lighter. However, as the passenger traffic grew in volume during the war, the peaks gradually disappeared due to the decline in resort travel and the rapid increase in travel to and from the numerous military establishments in the South and business travel caused by the rapid expansion of industry in that area. The result was that during each month of 1943 and 1944 the average number of passengers handled daily was about 21,000, being somewhat less in 1945, with no seasonal fluctuations. Daily variations in the number of passengers handled, of course, continued to occur during these years just as in peace-time, and there have been several days on which in excess of 30,000 passengers have been transported.

Table No. 1 reveals the traffic statistics for 1929, the previous peak year, and for the years 1940 to 1944, inclusive, and the first nine months of 1945, clearly showing the tremendous impact of wartime traffic on this strategic railroad.

* This includes all trains, non-revenue as well as revenue.

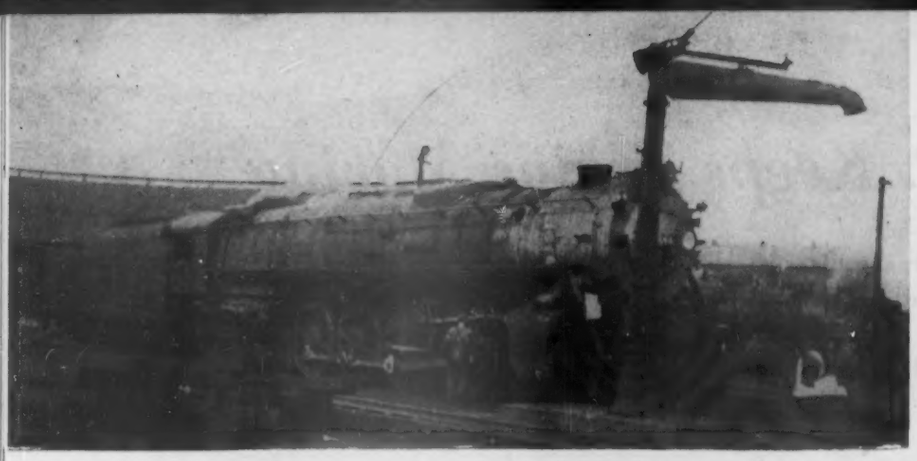
Map of the R. F. & P. showing principal connecting carriers

The Richmond, Fredericksburg & Potomac is one of the shortest Class I railroads in the nation, with only 112.7 mi. of line. Its great strategic importance stems, however, from the fact that it is the principal route through which the commerce of the northern and southern cities of the Atlantic seaboard region can flow. Over this road must pass virtually all of the traffic interchanged between the Pennsylvania and the Baltimore & Ohio on the north and the Atlantic Coast Line and the Seaboard on the south.

As far back as the Civil War the strategic import of the road was recognized, and the struggle for its possession resulted in many battles, even though the line then extended only as far north as Aquia Creek, where steamship connections for Washington were made via the Potomac river. Although the railroad played an important part in the movement of troops during the short Spanish-American War of 1898 (33,540 soldiers being handled in that year), it was not until World War I that the line handled any large volume of military traffic.

In 1918 the road, together with the Washington Southern (then that part of the line between the Potomac river and Quantico, Va.), produced a passenger mileage of 214,913,894, an all-time peak until 1941. The peak in freight traffic of the World War I period was reached in 1919, when 469,170,363 revenue net ton-miles were produced, a rec-

High standards of track construction and maintenance are characteristic of the R. F. & P.



Five of this group of 4-8-4's are assigned to freight service —The R. F. & P. owns 27 of these modern locomotives

ord exceeded only in 1929, until preparation for the recent war resulted in far heavier traffic commencing in 1941, the traffic records of the World War II years being the greatest ever produced in the 111 years of the company's existence.

Retires Last of Bonds

The background of the road is unusual in many respects. It is today the only American railroad which has been in existence for more than a century under its original name and without reorganization. In spite of damages suffered during the Civil War, the road has never defaulted on the payment of interest or principal and has maintained an unbroken dividend record since 1881. On September 1 of this year it paid off its last remaining bond issue, making it one of the few U. S. Class I railroads without bonded indebtedness.

In this connection it might be pointed out that, in 1835, the Commonwealth of Virginia invested $275,200 in stock in the then newly organized company. Since that time, the Commonwealth has received stock dividends to the face value of $1,479,415 along with $4,956,464 in cash dividends. This R. F. & P. stock is all that remains to the Commonwealth of some $48,000,000 invested prior to the Civil War in "public works," such as canals and river transportation developments, toll bridges, turnpikes and early railroads. In 1944 the Commonwealth received dividends of $140,384 on its R. F. & P. investment as compared with large expenditures of money for interest and maintenance on the state highway system alone, not allowing for expenditures by counties, etc.

The safety record of the road has also been outstanding in that in 109 years of operation there have been only two accidents to passenger trains resulting fatally to passengers, one in 1878 and the other in 1925. In each accident one passenger was killed.

The R. F. & P. is a double-track railroad for its entire distance between the James river at Richmond and the Potomac river at Washington, with four tracks for 5 mi. out of Richmond, 3.5 mi. south of Fredericksburg, and 5.8 mi. at Alexandria to the Potomac river. The road's entire main line is laid with 130 and 131-lb. rail and is ballasted with crushed stone. Of the main line ties, 95 per cent are of treated hard woods. Since that is the only kind of tie now being used on the road, it is a matter of only one year before the last untreated tie will have been replaced.

Maximum grades northbound are 0.6 per cent and southbound 0.8 per cent. Maximum curvature is 2 deg. except for a 2½ deg. curve at Brooke, another near Washington and a 4 deg. curve at Fredericksburg. Aside from the general speed restriction of 70 m.p.h. for passenger trains and 45 m.p.h. for freight trains, the only speed restrictions between terminals are one of 50 m.p.h. over the Chesapeake & Ohio crossing at Doswell, Va., 30 m.p.h. passing station platforms at Fredericksburg and Alexandria, 60 m.p.h. on a curve near Washington and 35 m.p.h. over a bridge at Quantico. An additional 35 m.p.h. restriction is in effect over the Aquia Creek drawbridge, but this will be eliminated early in 1946 when a new high-level, fixed span bridge is placed in service. Interlockings are located at five points between Richmond and Washington controlling crossover and siding switches, in addition to the plants at points where trains enter and leave the main tracks at the terminals. A sixth such plant is now under construction at Fredericksburg and will be in use early this year. Remote control of some switches, modernization of two interlocking plants, reverse running signaling and some sections of C.T.C. are being studied as post-war projects.

During 1944 train movement over the road averaged 103 trains per day, or one every 14 min. With trains operating on such close headway and with passenger and freight trains handled on the same tracks, it is obvious that if there were not almost complete absence of speed restrictions for freight trains, it would be extremely difficult to prevent serious congestion due to bunching of trains at points where speeds must be reduced. Likewise the use of interlocking plants and power switches reduces to a minimum the time required to clear passenger trains.

Operation is entirely by signal indication, with wayside signals supplemented by an automatic train control system of the continuous type. Passenger train schedules are shown in the time card, but the special instructions relieve inferior trains from the necessity of clearing them. The rules also provide that all trains other than scheduled trains (which are all first-class trains) will run extra without orders on signal indication between Richmond and "R O" tower at Washington. When it is desired that a train depart from either terminal, the interlocking operator secures the necessary authority from the train dispatcher to line up a route from the yard to the main line. Upon receipt of a clear signal indication, the inferior train may depart, regardless of any first-class train that may be due. Likewise the inferior train may proceed over the main

Table No. 1—Richmond, Fredericksburg & Potomac Railroad

Traffic Statistics

	1929	1940	1941	1942	1943	1944	Per Cent 1944 of 1929	1945, 9 Mos.	Compared Previous Year
Revenue Net Ton-Miles	469,291,410	451,106,000	659,940,000	1,211,739,000	1,480,224,000	1,419,224,495	302	975,381,734	Dec. 9 Per Cent
Freight Revenue	$5,998,975	$5,225,035	$7,609,836	$15,086,051	$18,143,998	$18,198,857	303	$12,859,138	Dec. 6 Per Cent
Freight Density†	10,931	10,465	15,376	28,232	34,488	34,314	314	31,864	
Freight Train Miles	860,055	739,210	992,857	1,546,342	1,721,344	1,655,489	192	1,204,921	Dec. 5 Per Cent
Number of Freight Trains Operated	9,638	7,050	9,463	15,683	16,616	15,905	165	11,597	Dec. 5 Per Cent
Revenue Passenger-Miles	105,218,918	146,194,180	248,188,423	520,247,548	816,480,183	821,834,548	781	523,320,833	Dec. 17 Per Cent
Passenger Revenues	$3,673,230	$3,006,855	$4,845,731	$10,734,708	$16,212,941	$16,785,373	457	$10,473,608	Dec. 17 Per Cent
Passenger Density*	2,451	3,397	5,783	12,121	19,023	19,871	811	17,335	
Passenger Train Miles	1,618,631	1,531,640	2,709,245	2,044,201	2,281,047	2,410,210	148	1,725,676	Dec. 3 Per Cent
Number of Passenger Trains Operated	14,850	13,967	15,622	18,860	20,898	21,948	148	15,650	Dec. 4 Per Cent

† Revenue Net Ton-Miles Per Mile of Road Per Day.
* Revenue Passenger-Miles Per Mile of Road Per Day.

line until directed by signal indication to enter the siding, the arrangements for the movement being left entirely to the dispatcher and the towerman. Similarly a train departs from a passing track upon signal indication without regard to the superiority of other trains that may be due.

Under this method of operation only two or three train orders are issued each day, usually "slow orders," unless unusual circumstances require the singling of a section of track. The flexibility of this system of train dispatching is such that it is not unusual for a freight train to depart from either Potomac yard or Richmond, while a passenger train is performing station work in the terminal, and run ahead of the latter for several miles before it is necessary to allow the superior train to pass, whereas under the time-table and train-order method it would have been necessary either to hold the former or else, in order to give the inferior train authority to depart, to restrict the superior train, with resultant delays.

All but one of the remote-control passing tracks are of conventional double-track arrangement, one in each direction on the outside of the main tracks, with power switches at the entrances and power or spring switches at the departing ends. At "C W" tower, 14.5 miles north of Quantico, however, a center siding is in service, connected on the south end with both northward and southward main tracks, and on the north end with the northward main track only, making it necessary for a southward train to back in. In order to prevent stopping such a train at the tower for instructions when it is desired that it use "CW" siding, a take siding signal has been installed at this point. This signal displays a purple light, and when burning in connection with a proceed signal indicates that the train is to run south of "CW" tower and back into the siding.

A somewhat similar arrangement is in effect for southward trains at Quantico, where there is a southward passing track equipped with hand throw switches. In this instance, a purple light, indicating "take siding," is located some distance north of the siding and, when burning, instructs a train to stop and take siding at Quantico. When in the clear, the crew is required to communicate with the operator at that point for instructions if necessary. Telephones are provided for this purpose at three points in the Quantico area. Telephones to the nearest operator or direct to the train dispatcher, or both, are likewise installed at virtually all industrial spurs, non-interlocked passing tracks, passenger stations, water columns and at many block signal locations as well.

New Locomotives Acquired

As shown in the table, freight traffic in 1943 and 1944 was more than three times what it was in 1940, while passenger traffic increased to more than five times the 1940 level. As might be expected, such a sudden rise in business placed unprecedented demands on the road's rolling stock and particularly on the locomotives and passenger cars. At the close of 1940 the R. F. & P. owned 82 steam locomotives and 99 passenger train cars. Of those locomotives 11 were modern, 4-8-4 type, dual-service machines, purchased in 1937 and 1938, while the remainder were largely light, medium and heavy Pacific-type locomotives, plus four 4-8-2 type engines and numerous switchers. The following year it was necessary to retire three locomotives so that at the close of 1941 there were only 79 engines available. In 1942 six additional 4-8-4's were received and two 1,000-hp. Diesel-electric switchers. The following year ten 2-8-4 type freight locomotives were added to the roster, as well as two additional Diesel switchers. During most of 1942 the R. F. & P. supplemented its motive power supply by leasing from one to eight road locomotives from the Chesapeake & Ohio, as well as six steam switch engines, three each from the C. & O. and the Pennsylvania. The road engines were returned to their owners during February and March of 1943, as were the three Pennsylvania switchers. The three C. & O. switch engines were heavy Mallet locomotives developing 108,000 lb. tractive effort, and proved so valuable as hump engines at Potomac yards that they were purchased in 1943 and are now used in that service. Also in 1943 six mountain type freight locomotives were purchased from the Norfolk & Western.

In 1944 the R. F. & P. acquired two additional 1,000-hp. Diesel switchers from the builder. In this year also ten additional 4-8-4's were received, making a total ownership of 27 such locomotives.

Although all of the 4-8-4 type engines have 77-in. drivers, five of the last ten are somewhat heavier than the earlier groups, and are equipped with roller bearings on all axles. They handle 3,200 actual tons northward and 2,400 tons southward between Richmond and Potomac yards, as compared with 2,500 tons northward and 2,000 tons for the other locomotives of this type. Five of the latest group of ten 4-8-4's, together with the ten 2-8-4's, which carry the same tonnage rating, the ten mountain type locomotives, and six heavy Pacifics with 69-in. drivers, perform the bulk of the freight service, while the heavy through passenger service is protected by a fleet of 22 modern, high-speed

One of three heavy Mallet locomotives used as hump engines at Potomac yard

4-8-4's, leaving four heavy Pacifics for local Richmond-Washington trains and 12 lighter Pacifics for extra passenger trains which are frequent on this line.

The problem of securing sufficient passenger cars to supply its proportion of the through equipment in the regular New York to southeastern points through trains, while at the same time protecting heavy military movements originating locally at Quantico, Fort Belvoir, Va., and A. P. Hill Military Reservation near Fredericksburg, was tackled in much the same manner as that used to secure additional motive power, except that new cars could not be built.

Traffic Rise Anticipated

In 1941, before the full impact of the war had hit and before the nation had become an active participant, the management of the R. F. & P. foresaw the need for additional passenger equipment and purchased 10 Pullman parlor cars from their former owner, three additional such cars being acquired in 1942. All of these cars were rebuilt and converted to coaches.

In spite of the increase of 10 per cent in passenger cars owned at the opening of the war in 1941, as compared with the ownership at the close of the previous year, the road was hard pressed to find sufficient passenger equipment to meet the demands. In July, 1943, 7 coaches were leased from the New York Central, 12 from the Erie and 8 from the Delaware, Lackawanna & Western. The total of 27 cars under lease at that time, together with the 13 rebuilt Pullman cars owned, represented an increase of 40 per cent in the number of passenger cars available when compared with 1940. The seven N. Y. C. coaches were purchased from their owner in July of the following year. In August, 1944, the D. L. & W. called for the return of its cars, while the Erie coaches were sent back to their owner the following May, when heavy movements of returning troops into this country began.

Another factor contributing to the R. F. & P.'s successful handling of the tremendously increased passenger traffic was the road's unique passenger station at Richmond, which permits all mail, baggage and express handling to be concentrated in one end of the station layout, leaving the other end open for necessary switching. The station itself is of the conventional overhead through-type with a combination waiting room and concourse spanning the tracks, which are provided with covered island platforms. Unlike most through-type stations, by means of a loop arrangement of the tracks, all train movements pass through the station in the same direction.

By this layout it is possible to segregate all engine servicing and mail, baggage and express facilities (including trucking on the station platforms) in one end of the station layout, leaving the other end open for any necessary switching, and reducing switching distances for head-end cars to a minimum. Careful supervision of the consist of passenger trains, combined with the natural advantages of the station and yard layout, make it possible to perform all of the time-consuming station operations at Richmond, including switching the train, working head-end traffic and changing motive power simultaneously and without mutual interference, thereby holding station time to a minimum.

There are, in addition, other operating advantages resulting from the unusual track layout at this station, one of the most important being the elimination of delay while turning trains or engines. In the case of the former, when a local Richmond-Washington train arrives, it remains on the track on which it stops, for servicing, cleaning and temporary storage. When ready to depart, it is loaded while standing at the same spot where it arrived and without having been moved. Leaving the station it proceeds around the loop and is thereby turned en-route.

Likewise, it is never necessary to turn a passenger engine, as the incoming engine is always headed in the right direction for an outbound train, regardless of direction. This is particularly important in the case of the Atlantic Coast Line Diesel-electric passenger locomotives which operate into this station usually in three units. These engines have only one cab and consequently, in a conventional station layout, would have to be turned on a wye track or turntable, a time-consuming and expensive procedure.

As would be expected on a road as short as this, there are only two important freight yards on the line, one at each end. Of the two, the Potomac yard is by far the more important. It consists of a northbound hump, with 48 classification tracks and a southbound hump with 29 tracks. The northbound hump was equipped for retarder operation some years ago, but riders were used on the other until November of 1945, when retarders were placed in service in the southbound yard.

Table No. 2 shows the number of cars classified during the first seven months of 1944 and 1945. The 2,724 northbound cars classified on a single day in January, 1944, represent the all-time high in this yard. On this day a total of 1,107 cars moved over the northbound hump during a single 8-hr. trick. An interesting feature of the humping operation at Potomac yard is the fact that no trimmer engines are used. In their place the heavy Mallets, which are used as hump engines, cross over the humps and go down into the classification yard whenever trimming is necessary.

In addition to switching R. F. & P. trains, freight trains of the Pennsylvania, Baltimore & Ohio, Southern, and Chesapeake & Ohio are made up in Potomac yard. To accomplish this purpose a total of 47 northbound classifications are made for the Pennsylvania and the B. & O. Southward there are 22 classifications for the Richmond, Fredericksburg & Potomac, Southern, and Chesapeake & Ohio. In addition there is one southbound track designated for empty refrigerators, which, because they move on a mileage equalization plan, do not require classification by actual home records, and another for cars destined to the Fruit Growers Express Company shops at Alexandria.

A separate article on the operation of Potomac yard will appear in a future issue of the *Railway Age* which will describe in detail the entire operation, including the new car retarder system in the southbound yard.

Table No. 2—R. F. & P.—Potomac Yard
Number of Cars Classified Per Day

	Northbound		Southbound	
1944	Daily Average	Highest Day	Daily Average	Highest Day
January	2,280	2,724*	1,903	2,158
February	2,355	2,671	1,810	2,083
March	2,282	2,525	2,141	2,424
April	2,394†	2,651	2,046	2,219
May	2,288	2,612	1,851	2,040
June	2,193	2,496	1,831	1,907
July	2,162	2,490	1,809	1,917
August	2,067	2,347	1,685	2,031
September	1,836	2,145	1,507	1,769
October	1,915	2,238	1,653	1,965
1945				
January	2,225	2,513	1,634	2,072
February	2,228	2,630	1,887	2,103
March	2,363‡	2,663	2,003	2,192
April	2,263	2,610	1,884	2,191
May	2,116	2,438	1,766	1,999
June	2,092	2,427	1,510	1,827
July	1,966	2,392	1,674	2,024
August	1,515	1,832	1,348	1,826
September	1,487	1,820	1,392	1,571
October	1,510	1,777	1,326	1,565

* Greatest single day in history of Potomac yard. 1,107 northbound cars were classified in a single 8-hr. trick on this day.
† Highest daily average for one month.
‡ Second highest daily average for one month.

How the Enterprise System Can Be Saved

Too many business people "fall" for political handouts, not being smart enough to penetrate the socialist strategy of "divide and conquer", to which industry is succumbing piecemeal

By SAMUEL O. DUNN
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TRAFFIC clubs began to be organized more than forty years ago to promote better understanding by the buyers and sellers of transportation of their mutual problems. Subsequently, almost a quarter of a century ago, there were organized advisory boards composed of shippers for the purpose of effecting better co-operation between shippers and railways, especially in the distribution and use of freight cars.

The organization of traffic clubs and shippers' advisory boards has had results in peace and in war, especially during the recent war, the importance of which could hardly be exaggerated. The railways more than deserve all the commendation they have received for rendering magnificent service during World War II. But too much credit could hardly be given to the shippers of the nation for the co-operation and support they gave the railways—co-operation and support without which the railways could not possibly have rendered the huge and invaluable service that they did.

Ignorant Selfishness Deadly

The shippers were, no doubt, influenced by selfish motives. They knew that the industries they represented could not adequately increase their production unless the railways were enabled by the co-operation of shippers to meet vastly increased demands. But there is a wide difference between ignorant selfishness and intelligent selfishness. It might be said without much exaggeration that ignorant selfishness causes all the troubles that afflict mankind. Intelligent selfishness usually does good. Intelligent selfishness is patriotic selfishness because it recognizes the fact that for the long pull it is to the interest of every citizen to abstain from doing things that are inimical to his country's welfare and to do all the things he can that will promote its welfare. I venture to assert that never in the history of this or any other country has any group of its citizens shown more intelligent selfishness, more real patriotism, in handling their business than was shown during the recent war in this country by those who manage the traffic of our great producing industries.

This article is adapted from an address to the Traffic Club of St. Louis on January 16.

The war is behind us. It has left us confronting the problems of peace. The problems of war were difficult to solve. The problems of peace will be more difficult. It may have been difficult to get some of us to do our duties during the war. It was not difficult to decide what our duties were. We see now on every side the evidence that in time of peace most of us are prone to begin asserting what we are pleased to call our "rights." There is an old-fashioned view that every "right," legal or moral, possessed by anybody has a correlative duty. You have a right to the property you buy, as, for example, an automobile. But, according to this old-fashioned view, you have a correlative duty to use your property consistently with the public welfare. You have a duty, for example, to so drive your automobile as not to menace public safety. Government has a right to tax. But it was formerly believed government had a correlative duty not to so tax as to confiscate incomes and property. It is now a generally accepted view that every worker has a right to a job. But it was formerly also an accepted view that every man who was given a job had a duty to do work that was worth what he was paid.

"Rights" Without Duties?

We are confronted with more difficult and menacing problems than after World War I because there has been widely accepted in this country within the last dozen years a revised version of economic rights and duties.

We correctly assumed during and after World War I that government and business would be conducted after the war as they had been before the war. Private enterprise would be relied upon for production, transportation and employment. Government would interfere little excepting by regulating naturally monopolistic industries, enforcing competition in other industries, and levying taxes only to get money to defray ordinary expenses of government, including the provision of public works really needed or demanded by the public. These expectations were in the main fulfilled, and we had after the inflation and deflation in 1919-1922 a period of unusual prosperity.

Economic conditions are more favorable now to a period of prosperity than after World War I. The need for goods and services, and the buying power of the people and business which were accumulated during the recent war, are much larger than after the previous war. But between the period of prosperity that followed the last war and the beginning of the recent war we had the great depression. And many of our people and public men are now completely dominated by a depression complex.

Economic Progress

Many have forgotten, and many are too young or uneducated to have ever known that, with minor set-backs, we made for two decades before World War I and a decade after it the greatest economic progress and had the greatest prosperity ever enjoyed by this or any other nation. All they know is that we had the depression; that it caused heavy losses, large unemployment and much suffering; that the government adopted certain so-called "recovery" policies; and that some time before or during the war the depression apparently ended. They forget, or never knew, that under the so-called "recovery" policies, including government-enforced reductions of working hours and advances of wages, and greatly increased government spending, that were tried before the war, *the depression never did end.*

They know that under the innumerable government controls adopted and the huge government spending done in carrying on the war we had what seemed to them prosperity. Hence, when they are told over and over again by radical politicians and labor leaders that similar policies, and many more of them, must be adopted to prevent another and perhaps worse depression, and that the adoption of enough of such policies will provide security from the cradle to the grave and abundant life for all, they support enthusiastically the most extreme proposals and demands.

The new widely accepted economic

theory is that the sovereign means, and, indeed, the only means, of preventing depression and unemployment is that of providing the masses with larger consumer purchasing power. On this theory, not only must the general level of wages be made higher than ever and constantly raised, but everybody has a right to receive enough income to enable him to maintain a decent standard of living. The theory imposes no duty on a man who is given a job to do work equal in value to the purchasing power with which it is claimed he must, in the national interest, be provided. If he cannot or will not do work for private business by which he can earn enough purchasing power for himself, he must be subsidized with taxes collected from other people.

The government must provide him a job on "public works," at the going rate of wages, build him a home and rent it to him for less than a private owner could afford to take, afford him medical care below cost, pay him as much or more unemployment compensation if he is unemployed as he could earn if employed, and insure him and his family against the effects of his disablement or death. It is assumed that by such means the masses can be provided with enough consumer purchasing power to cause high level production and employment regardless of the effects that the resulting high labor costs and high taxes, together with government controls of prices and building rentals, would have on business profits.

A Prophecy of 39 Years Ago

I attended my first traffic club dinner at Pittsburgh thirty-nine years ago. One of the speakers was Robert Mather, an eminent railway lawyer. The Hepburn Act firmly establishing federal government regulation of railways had just gone into full effect. Mr. Mather illustrated with a quotation from Von Holst's "History of the French Revolution" the lengths to which bureaucratic interference might be carried in this country if the trend in that direction continued. The quotation was part of Von Holst's description of the "ancient regime" which reduced most of the people of France to beggary and caused the terrible revolution in that country in the 18th century. It seemed inconceivable thirty-nine years ago that Mr. Mather's quoting of Von Holst could prove prophetic of developments in this country; but I am going to read it to you now, and let you judge whether it has proved prophetic. Here it is:

"All the threads of the governmental apparatus issued from and terminated in the council of the king. . . . The *controleur general* . . . was . . . the centre around which everything turned. . . . He might be properly called *the* administrator of the kingdom; and under the *ancien regime* the administering was extended practically to everything.

"What the *controleur general* was for the whole state, the *intendant* was for its administrative subdivision, the *generalité*. He had his hand in everything, and always in the spirit of bustling, distrustful, and presumptuous paternalism. There was nothing the intendant did not do or control. He allotted the taxes; . . . he . . . directed all the public works; he distributed what the government appropriated for the support of the poor; he opened or shut the doors of the public workhouses to the indigent; he told the peasant how the government wanted him to till his field and feed his cattle; . . . he advised the municipalities, which officially still enjoyed self-government, whom to elect to the municipal offices, and they never dared to have a will of their own; . . . through him the community had to ask the permission of the council to spend money for any municipal purpose. . . .

"Surely, this governmental machinery was simple enough,—ay, it was of a fearful, paralyzing nay, absolutely killing simplicity. . . . *The capability for self-government was systematically annihilated.* And it was done so successfully that the people at last could not get enough of this kind of paternalism. We meet with bitter complaints that, in regard to one thing or another, the government had not marked out the way with sufficient clearness and strictness. On the other hand, however, the kicking against the pricks never ceased, because, while the essence of self-government was destroyed, its forms were partly left standing. . . . The acting and reacting of the two conflicting tendencies upon each other resulted in the belief that anything can be accomplished by legislation, and in gaging the government by this standard. As the government charged itself with attending to everything, it was of course held responsible for everything. Commanding, instructing, or at least advising in regard to everything, was it not also its duty to foresee everything up to the fancies of fashion, the whims of trade, the freaks of the weather? The government became the terrestrial Providence.

"One of the attributes of Providence is omnipresence. If we merely look at the *intendants* and their subordinates, who did nearly all the real governing, we get but a very inadequate idea of how far government under the *ancien regime* came up to this requirement. . . . There was such an innumerable host of all sorts of public officials, that one is tempted to say, whatever a man did, he was almost as sure to have some kind of a public functionary at his side, as he was to be followed by his own shadow. If the peasant brought an ox to market, the inspector of cattle presented himself; the inspector of calves looked after the calves; the inspector of swine took care of the pigs, and if it happened to be a sow with young he was joined by the inspector of sucking pigs. And thus all over."

Industry Being "Railroaded"

A significant effect of developments under the New Deal which most people do not seem to have observed is that they have made the problems presented to all our great industries, excepting perhaps agriculture, in this post-war period similar to those which have long been presented, and are still being presented, to the railroad industry. Our railroad problem has ceased within the last dozen years to be unique, and has become only a part, although a most important part, of the problem of reversing the trend of our entire national economy away from the system of private enterprise and toward the system of national socialism.

Certain influences were tending during the two decades before the Great Depression to socialize transportation in this country. These influences included government regulation of railway rates and government subsidization of water and highway competition with the railways. First, government regulation of rates began to be used as a means of regulating and restricting railway profits. Then government subsidization of competing carriers began diverting traffic from the railways and further adversely affected their profits. Finally, within the last dozen years, government began actively backing efforts of labor unions to increase their power and use it to capture a larger part of the railway earnings available for division between owners and employees.

Business Helps Its Enemies

The policies of regulation, large government spending, and subsidization tending to destroy railway profits and socialize all transportation, were long supported, and are still in large measure supported, by business interests in the belief that these business interests would benefit by them. But within the last dozen years we have been hearing from business of all kinds increasingly loud outcries which have now risen to a tumult against government policies threatening it with socialization and destruction. And what are these new policies? They are much the same policies that for years have been applied to the railways.

There is no difference in principle or effect between using regulation of rates to restrict the profits of the railroads, and using regulation of prices to restrict the profits of other industries. There is no difference in principle or effect between using the taxpayers' money to subsidize competition with the railroad industry, and using the taxpayers' money to subsidize competition with the public utility industry, the private building industry or any other industry. There is no difference in principle or effect between using the power of government to back labor union demands on the railways and using the power of government to back labor union demands on other industries.

The long accepted theory has been that the railways are naturally monopolistic, are engaged in a public service, and therefore should be subjected to special regulation, whereas most other in-

dustries are naturally competitive and should be regulated principally by enforcement of the anti-trust laws. But this does not alter the fact that the railways are as much a part of private enterprise as any other privately-owned business or industry, that their successful management and adequate development are as essential to the public welfare as the successful management and adequate development of any other important industry, and that government policies of whatever kind which unduly restrict their profits are as inimical to the public welfare as government policies which unduly restrict the profits of any other industry. And recently we have seen the Department of Justice ignoring the special regulation to which the railways are subjected and proceeding against them in the courts for allegedly violating the anti-trust act by doing things necessary to enable the Interstate Commerce Commission to carry out the special policy of regulation applied to the railways by the Interstate Commerce Act.

All Industry Is a Target

It should be plain to everybody that the paramount issue with which we are confronted now by the struggle between radical politicians and labor leaders, on the one hand, and conservative politicians and business leaders, on the other hand, is whether the profits that can be derived from private investment in and management of property shall be so restricted as to prevent adequate private investment in property and make successful private management of it impossible.

And lest you be prone to believe it is exaggeration to say this issue involves *all private property,* let me emphasize to you the similarity of the problems presented by prevailing and proposed government policies to two of our great but widely dissimilar industries with whose affairs I happen, as a publisher, to be especially concerned. The railways are our most highly *centralized* great corporate industry. The threat to their future as a private enterprise consists of government policies tending to restrict and destroy their profits by subsidizing competition with them, by backing labor unions in demands for excessively costly wages and working conditions, and by controlling their rates largely in disregard of increased costs. The home-building industry is one of our most highly *decentralized* great industries. And yet the serious present threat to our imperatively needed huge increase in home-building consists of policies tending to restrict and destroy the profits of private home ownership and home-building by putting government-owned housing into subsidized competition with privately-owned housing, and by imposing ceilings on the amounts for which homes may be rented, or even sold, largely regardless of the increases that have occurred, due to government labor and taxation policies, in the costs of owning and building homes.

It is hardly necessary to say, when private enterprise is threatened in two such dissimilar industries as the railroad industry and the home-building industry by similar government policies, that private enterprise in all industries is threatened by these policies.

Confidence, the Missing Factor

We never had before in this country such huge shortages of things that people desire and need. We never had before such large accumulations of purchasing power in the hands of the people and of business. We never had before such large capacity for construction, production and transportation. All we need, in addition, to cause a period of great and prolonged prosperity is confidence by business in the future. But the only kind of "confidence" that ever did or ever will inspire business to go boldly forward is *confidence in the opportunity to make profits* under competitive conditions that government makes fair by controlling natural monopolies, preventing artificial monopolies, and neither subsidiing nor handicapping anybody by unfairly discriminatory use of governmental power.

And yet we see drives being made from two directions for the purpose of preventing business from making the profits that it normally would make in a period of such prosperity as present economic conditions would make it possible for us to have. On the one hand, labor unions, largely backed by government, are demanding wages and working conditions which would greatly increase labor costs throughout our construction, production and transportation industries. On the other hand, government is seeking to continue and even increase controls of prices and rentals adopted during the war to prevent inflation. This is like simultaneously stepping on the accelerator and applying the brakes to make an automobile run, but not run too fast. Perhaps the simile would be improved by saying that it is like stepping on the accelerator and applying the brakes of an automobile to make it run without putting any gasoline into the tank. For profits are the gasoline which make the economic system of private enterprise run, and, if you don't give it profits, or don't give it enough profits, it won't do any good to step on the accelerator and you won't have to apply the brakes, because without profits it won't run anyway.

Why are these attacks upon profits being made by labor leaders and so many politicians? My answer to this question will perhaps be regarded by many of you as a shocking exaggeration. My answer is that the profits of all business are being subjected to attacks that menace the entire system of private enterprise because the Communist party, although small in numbers, has become the most influential political party in the United States. Communism is just a synonym for socialism, excepting that Socialists usually advocate the promotion of socialism only by propaganda and political methods, while Communists advocate the promotion of socialism by both propaganda and force. Both Communists and Socialists long have propagandized the doctrine of Karl Marx that all profits are derived from the exploitation of labor by the capitalist, and that, therefore, all profits are robbery. Propaganda against profits has been carried on by Communists and Socialists for many years, and they have done their propagandizing so persistently, through so many channels and so skillfully, that they have made Socialists of many millions of people who have not the slightest consciousness that they have become Socialists.

Many who believe they are wholly opposed to socialism have accepted its doctrine to the extent of being opposed, as they say, to "excessive profits." Or they have accepted socialistic doctrine to the extent of believing and contending that industries such as the railroads that render a public service should not be allowed to make large profits, or that all industries should have their prices controlled and their profits restricted until they attain high level production and employment. But all such views are due to the widespread acceptance of socialistic doctrine, the application of which by government policies would forever prevent high level production and employment by private enterprise. And the extensive resort to force and violence in labor disputes which we have been witnessing undoubtedly has been largely due to incitement by Communists who openly avow their policy of using whatever means may be necessary to Russianize our political and economic institutions.

"Free Enterprise" Defined

Let us get down for a little while to fundamental principles. We talk much about "free private enterprise." Well, what really is "free private enterprise"? My definition of it is, enterprise which (1) seeks and receives no subsidies from government; (2) is subjected to no subsidized competition by government; (3) if naturally monopolistic, is strictly regulated by government; (4) if naturally competitive, refrains either voluntarily or because of government compulsion from practices restricting competition; (5) is not subjected by labor monopo-

lies or government to wages and working conditions that prevent normal, healthy functioning of private enterprise.

Competition affected neither by monopoly practices nor subsidies, and the profits made under it, are the essential driving forces of private enterprise. And no profits made by free private enterprise as I have defined it ever are excessive. For if under such competition the profits of a business are small or it operates at a loss, this is because it is inefficiently managed, or because there is no adequate market for its products. On the other hand, if the profits made by a business while meeting competition are large, they are large because it is efficiently managed and supplies a real need or demand for its products; and the larger its profits become the more conclusively they demonstrate that its management is efficient and that it supplies a product for which there is a large public demand.

What Is "Purchasing Power"?

Nobody questions that it is essential to prosperity that the masses shall have large purchasing power and shall make large purchases. But, first, large purchases by the masses are not all that is needed to cause prosperity, and, second, policies, whatever they may be, that restrict business profits for the supposed benefit of the masses, never have and never will increase the real incomes and purchasing power of the masses, but always will curtail them. Why? Because such policies ignore, among others, the following vitally important economic facts:

(1) The production of *useful* goods and services is the only source of real national income, and therefore, of real national purchasing power. The measure of the usefulness of any kind of goods or service is the willingness of people to buy it at a price or rate at least equal to the total costs of producing it, including a return on investment. Private enterprise will provide employment in producing all the goods and services that there is reason to believe can be sold at a profit. Hence, *government is certain to make a loss in producing anything which private enterprise will not produce*. Anything produced at a loss causes waste of capital. Capital provides all employment. Hence, waste of capital by producing anything at a loss reduces the employment that otherwise would be available.

(2) The useful goods produced which constitute real national income include both consumption goods and durable goods.

(3) Everybody buys consumption goods. Many wage-earners and other individuals buy many kinds of durable goods, such as automobiles and the materials used for housing.

But (4) business also buys these kinds of durable goods. For example, most of the nation's housing is built by business either to be sold or to be retained and rented, and, therefore, business buys most of the materials used in building and maintaining housing.

(5) Many very important kinds of durable goods—i.e., those used in constructing and maintaining the plant of production, transportation and communication—are bought only by business for business purposes.

(6) The volume of buying of durable goods done by business is determined by the current and prospective profits of business. When current and prospective profits are large, buying of durable goods by business increases. When current and prospective profits are small, buying of durable goods by business declines. Therefore, whatever restricts profits, whether high labor costs, high taxes, or too low ceilings on transportation rates, prices or building rentals, will restrict business buying of durable goods.

(7) The production of durable goods for the maintenance, improvement, and expansion of the plant of industry and transportation provides in periods of prosperity a very large part of all the employment and wages which enable the people to buy both consumption goods and consumers' durable goods. Hence, to maintain high employment and large mass purchasing power, business profits and business buying of durable goods must be maintained at high levels.

Profits Curb Kills Capitalism

The fundamental issue with which we are confronted is that of private enterprise versus national socialism. For whoever seeks by whatever means excepting fair competition to restrict the profits of private enterprise and income derived from those profits seeks thereby to prevent private enterprise from functioning efficiently. And the greatest present menaces to the future efficient functioning of private enterprise are government policies of fostering labor monopolies, of restricting prices and railway rates regardless of labor costs, and of heavily taxing private enterprise to subsidize competition of some private industries with other private industries, to subsidize government competition with private enterprise in many fields and to subsidize millions of people who it is assumed cannot earn enough to provide for themselves without such supplementary assistance.

The more effect is given to such government policies the less profits private enterprise will make, the less production and employment it will be able to provide, the more demand there will be for more government controls, taxing and spending and the farther we will advance on the road toward national socialism. We must decide the issue of private enterprise versus national socialism in favor of private enterprise now, by defeating the great volume of socialistic legislation now pending, for its passage now probably would make it impossible to turn back.

Business Aid to Socialism

I conclude by emphasizing to you who represent every kind of business that those who profess a desire to arrest the drift toward national socialism and preserve private enterprise cannot contribute toward these ends by doing nothing at all, or, worse still, by promoting, in their own supposed selfish interest, the socialization of other people's property while resisting the socialization of their own.

The railroads are a vitally important part of our private enterprise system. Government-subsidized competition has the same adverse effects on their profits that it has on the profits of other industries.

All of us who are in business are now in the same boat. All business is being subjected to the same socialistic propaganda and menaced by the same kinds of socialistic policies. We cannot risk overturning the boat by fighting among ourselves—by having little business attack big business or some industries promote the socialization of other industries. *We cannot save only part of private enterprise. We will either save it all or lose it all.*

The proponents of the government policies tending to destroy private enterprise and substitute national socialism call themselves "liberals" and desire us to believe these policies are new, that they will cause "abundance for all," and that those who oppose them are reactionaries.

Such policies are not new. They have been tried repeatedly throughout human history, and always with the same ruinous results. In 1919 Kipling wrote a poem entitled, "The Gods of the Copybook Headings." "Copybook headings," you will recall, are such truisms as "the way of the transgressor is hard" which we had to copy when we were schoolboys learning to write. Recalling that the carboniferous epoch was part of the earliest geological era which affords evidences of animal life, I conclude by quoting a verse from this poem of Kipling's the relevance of which at present you will readily perceive.

"In the carboniferous epoch they promised abundance for all
By robbing selected Peter to pay for collective Paul;
But though they had plenty of money there was nothing their money could buy;
And the gods of the copybook headings said,
'If you don't work you die'."

Maintenance Progress Through Research

The author describes much that has been accomplished to improve railway tracks and structures, and explains the need for further scientific development to improve materials and methods*

By J. B. AKERS
Assistant Chief Engineer
Southern Railway System

ENGINEERING research and engineering development can play an important role in assisting the railways in supplying the improved service which will be necessary in the coming competitive era. If we wish to fulfill our obligation to our employers, we must devote ourselves to such research in a comprehensive way.

Rail was nothing more than a wooden stringer about 125 years ago, but was improved by laying a strip of metal on top of it. The strap rail was an improvement, but it didn't wear well. Beginning about 1835 development was rapid and the rail assumed an approximate "T" shape in a matter of 10 years. In the 1860's, steel for rail was made available, and since that time the shape of our rail has changed very little, although the average weight of rail has increased steadily from 85 lb. per yard in 1924 to 92.3 lb. in 1934, and to 98.1 lb. per yard in 1944. While an increase in weight of rail is desirable, that alone will not accomplish all that seems necessary. Research and development, however, have made the rail a stronger, better member of the track. This development has by no means come to an end, and the observation of results in service will bring still further improvement.

The controlled-cooling process has eliminated transverse fissures, but we still have other troubles which must be overcome. Deformation of any kind in rail in service is undesirable. We cannot prevent curve wear, but we can slow the process by lubrication. Furthermore, hard as rail is, it cannot withstand the heavy loads of today without flow of metal and loss of ductility in the displaced metal. Cracks appear and the rail becomes ragged. Besides being unfit for service, such rails cannot be tested by detector cars. There is a large loss here, and it is a knotty problem for metallurgical research, the solution of which is worth a high price. Someone must develop a hardening and toughening agent which will not leave the rail brittle; or perhaps modify the head shape to accomplish the desired result.

"Shelly" Rails

We have "shelly" rails now, but have recognized them as such for only a very few years. Such rails usually develop on the outer sides of curves, but they occur in tangent track as well. On some railroads shelly failures require the removal of some rails in a year or two through irreparable damage to the top surface of the head, from which the steel comes out in rather large slivers.

One disturbing result of this defect is the formation of transverse cracks, which have their origin in a horizontal split at the bottom of the shelly spot. Then we have a defect which some call a compound fracture, while others call it a progressive fracture. These will grow just as any transverse fissure will grow and may develop before any surface indication can be observed. Such defects are about as dangerous as the true transverse fissure and the only way to locate them is by means of the detector car.

The finding of a method to obviate shelly spots in rail through engineering research will challenge our best brains. Some think these spots may be caused in some manner by mill practice; other assign metal flow as the probable cause. A committee of the American Railway Engineering Association is diligently working to discover why shelly spots occur, and to find a cure for them. No answer has been found as yet, but metallurgical research will be undertaken on a broader scale.

Recent research in rail has developed that excessive stresses sometimes occur in the upper fillets and in the web of the rail, and that it may be desirable to increase the web thickness and the radii of the fillets. Suggestions for improvements have already been made, and in one case are being followed experimentally by the use of a torsion-resisting rail, developed on the Burlington. Other designs to correct this trouble are being

* Abstract of an address before the Metropolitan Maintenance of Way Club, New York.

A group of maintenance engineers inspecting an installation of torsion-resisting rail

perfected by the American Railway Engineering Association. After a period of trial, changes in the rail sections may be adopted, but only after sufficient tests in service.

Many ideas are tried, but only a few succeed. Other experimentation is in the nature of changes in the shape of the ball of the rail, through which it is hoped to minimize metal flow, and perhaps have some effect on the formation of shelly spots. Research in rail must also in time eliminate the horizontal split head, which is known to be a mill defect; slag inclusions, which may result in the formation of a defect difficult to distinguish from a transverse fissure; and head checks, which seem to be due to traffic conditions, but the answer to which may be found in the improvement of running gear, as well as in the chemistry of the rail steel.

Research on Welding

We need more development in the repair by welding of manganese castings in special trackwork, such as crossings and frogs. True, methods today are better than they were, but there is still much to be desired in welding technique and in the results obtained. Two substantial tests to develop improvements are now in progress on the Chicago, Milwaukee, St. Paul & Pacific and on the Toledo Terminal, under the auspices of the Committee on Track of the American Railway Engineering Association. Special castings are being used to determine the effect of different welding currents and size of electrodes, as well as the chemistry of the electrodes. The continued tests being made on manganese castings are indicative of our lack of sufficient knowledge of the welding technique for this type of repair work. The same is true of the repair of heat-treated crossings.

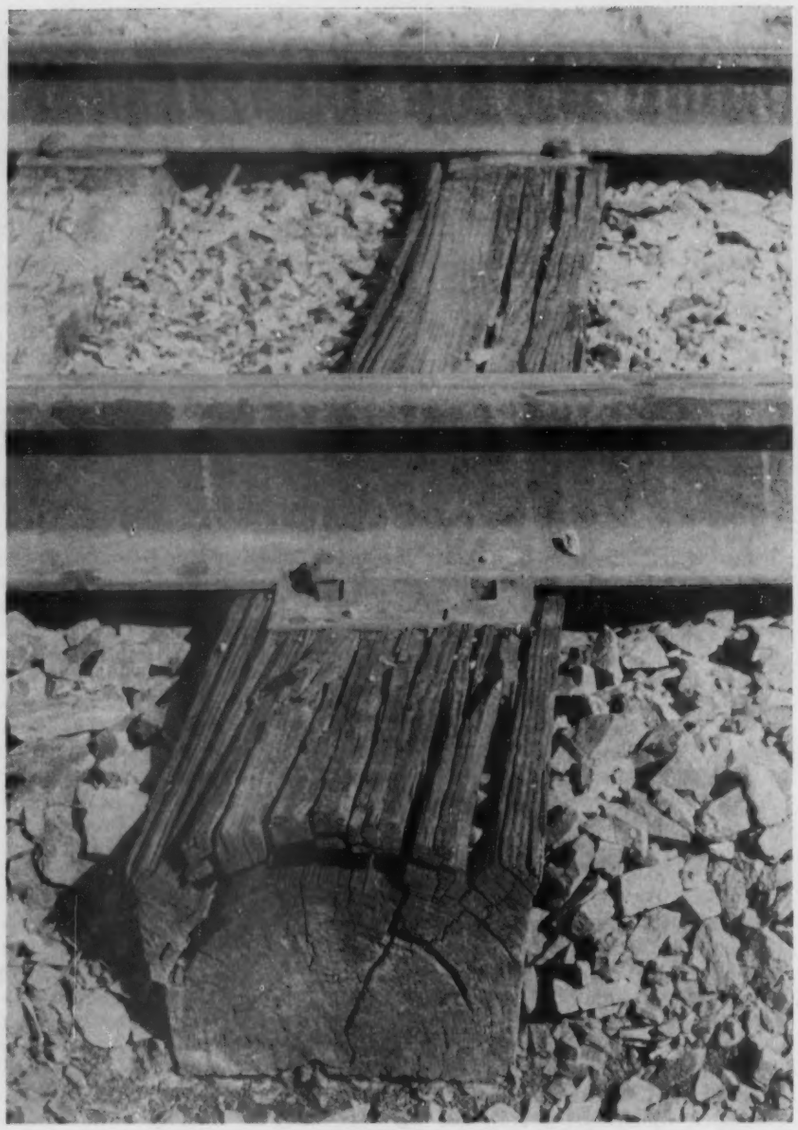
An investigation is in progress to determine the practicability of building up engine burns in track. We have many burned rails in service, and it seems that such rails must be removed from the track or built up in some satisfactory way. If not removed, there is the likelihood of transverse fractures developing beneath the burns, and of their spreading down through the ball of the rail and causing final failure. Results thus far indicate that such building up can be done successfully, and thereby continue in service a large amount of rail that would otherwise be removed.

Tie Plate Design

The railroads have been buying tie plates for years, but we are hazy as to the size of the plate and the proper relationship of width of the inner and outer shoulders. Research is now in progress designed to bring out definite knowledge in this regard. True, we have a better idea today than ever before as to the proper design of tie plates, but there are still numerous instances of tie plates cutting into the ties badly, and of rail turning either inward or outward. When the rail begins to turn, we soon have to level it by adzing the ties and then restoring the track to proper gage, line and surface. We know that it is not because of size alone that tie plates cut so badly into ties. The Southern, for example, has one design of 12-in. tie plate in service which cuts badly on the gage side, and another 12-in. tie plate which gives far better results. The only practical difference between them is in their eccentricity—a simple thing when the proper amount is determined, but elusive while you are searching for it. We need more study and observation for the further development of effective tie plates, as well as for methods of fastening the tie plates to the crossties.

Some idea of the uncertainty that prevails as to tie plate design may be had from the following facts. The 112-lb. RE rail section was adopted in 1934, and since that time the steel mills have cut rolls for 127 designs of tie plates for this section, varying by fractions of an inch both as to width and length. In addition, dies have been required for 288 different tie plate punchings. For the 131-lb. and 130-lb. RE rail sections, which have the same base width, there are 52 different tie plate sections, with 97 different punchings. A study is now in progress by the mills and the railroads looking to a material reduction in tie plate sizes and punchings.

Although we buy good crossties that are well preserved against decay, there are, in general, still serious faults in the



Checking and splitting of ties constitute a problem that remains to be solved

There are many other examples of improvements through research, and of great interest to maintenance men are the many developments in work equipment

tie, in that it is either too soft or checks and splits badly. Checking and splitting are responsible for the removal of many ties which are sound otherwise. These defects are mechanical in character and begin during the seasoning process. Our present way of combating them is to drive "S" or "C" irons into the ends of the ties, but a great many of these irons fall out after a few years of service in the track.

From the standpoint of the conservation of our material resources, we should find means to produce crossties which will give longer service and which will be free of splitting and checking. I am confident that the answer can be found through research in co-operation with the wood preserving industry. This industry, which has produced laminated timbers that can be bent to any form, and which knows so much about the chemistry and physics of wood, can work out a satisfactory answer to the checking and splitting of ties. The lack of such an answer results in enormous waste.

One treating plant has developed a rapid-drying process which seems to have promise, in which green ties can be dried in a few hours to a proper moisture content for treatment, following which the creosote treatment can be applied while the ties are in the same cylinder. An oak tie can thus be dried in about eight hours, and since it is then thoroughly heat-conditioned, the plant can go ahead with the creosoting procedure. The entire elapsed time is only from 15 to 18 hr.

Extensive investigations are being carried out to improve roadbed conditions. Most railroads have been lax in the study of soil mechanics, and it is fortunate for us that the public roads organization of the United States Government has been conducting research in this important field. We formerly thought that fills could be made only of materials as taken from adjoining cuts, but the highway engineers are showing us that this is not altogether true, and that treatment can be administered during construction that will materially improve conditions.

A highway soils engineer made an investigation of an old fill on our railroad and told us that the material in it should never have been used unless a special treatment had been administered. This fill, which was built before the Civil War, has worried us for many years. We now find that if something had been known about soil mechanics years ago, the material in it could have been made entirely satisfactory.

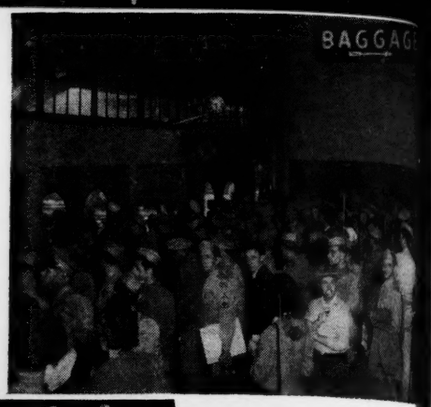
Roadbed grouting is being done on an extensive scale on the Atchison, Topeka & Santa Fe, on the New York Central, and on some other railroads. The soft spots, commonly called water pockets, in track on the New York Central, for example, are little if any different from those found in the tracks of all railroads, and occur in all types of roadbed sections, including deep cuts and high fills. The soil in the roadbed in these areas generally consists of soft clay, silt or other material which will retain a large amount of water, with the result that it has a relatively low bearing capacity. Due to this, the track ballast is driven into the subgrade under the loads and impact of traffic, and water pockets result.

What have we done about this? Sometimes we drive "squeezer" piles; sometimes we drain the pockets; sometimes we remove the material and replace it with better material. A more recently developed remedy is the grouting of the roadbed, and a study of the methods and results of this remedy is now being made by the research engineer of the Association of American Railroads. His report will, undoubtedly, bring about a large increase in the work done to cure soft spots in the track.

Other Developments

There are many other examples of improvements through research, and of problems on which more research and development are needed. For example, the proper treatment and care of rails in road crossings and tunnels presents an interesting problem. Of great interest to roadway maintenance men are the many new and important developments in work equipment in recent months, such as new cribbing machines, new spike drivers, and equipment for bridge gangs. The use of off-track equipment is growing by leaps and bounds. Practically all of our ditching and earth-moving work is now done effectively with such equipment, but there is still room for great improvement.

Continuous welded rail is another development, the first tests of which are now several years old. This is a subject about which you will hear very much more in the years to come. In fact, I am not so sure but that the answer in continuous welding is already at hand, but one of the first requirements in our kind of work is to be sure that safe conditions prevail, and it is taking us some time to convince ourselves of the complete safety of continuous welded rail in all its aspects.



Left—Bond rallies resulted in the M. P. over-subscribing its quotas. Right—Huge increases in passenger traffic were handled. Below—Wounded veterans of the M. P. gave talks on the importance of war - time transportation

The Missouri Pacific Does Its Bit

During the war countless special jobs were done, many of which could not hitherto be mentioned because of military secrecy

WHEN the war began, Knobnoster was a sleepy town of 400 inhabitants, nestling in the hills of western Missouri on the St. Louis-Kansas City main line of the Missouri Pacific. Its freight revenues in the first quarter of 1942 averaged about $1,500 per month, and even that was above average for this quiet community. In August, 1942, the freight revenues at Knobnoster were $237,884, while for July, August and September combined they were $622,387, or far more than the combined total of freight revenues collected at Knobnoster during its entire previous history. The reason for this startling change was the establishment of an air base two miles distant.

The revenues were, of course, quite acceptable to the M. P., but they brought with them a large number of highly complex operating problems. Such problems, repeated a thousandfold in various guises, were presented to the M. P. throughout the war. Most of them had to do with war-time transportation, but others were far afield from transportation. However, in an all-out effort to aid in winning the war, the M. P. tackled whatever problems were presented to it by the Army, Navy and the war plants.

Since 1927 the Missouri Pacific has had a continuing program of improving its facilities, which resulted in its entering upon the difficult task of war-time transportation in splendid physical shape. This program was not embarked upon in preparation for war, of course, but to permit the operation of trains more efficiently and at higher speeds and also to remove the threat of flood damage which had been present for years in the valleys through which the line operates. In another respect, the M. P. did prepare for war. When the defense program was first established, the industrial department stationed a representative in Washington to get acquainted with the various departments of the government and to serve their needs.

By continuing contacts with all branches of the service the M. P. gained a knowledge of what types of establishments were to be built and the general territory in which they might best be located. When this information was assembled, engineers were sent into the field to find suitable sites for such installations as ordnance plants, military camps, air fields, proving grounds, chemical plants and a variety of others. This information was printed in brochure form and distributed to the proper officers of the government. Thus, the territory served by the M. P. was dotted with war establishments of all kinds. The military installations represented an investment of approximately half a billion dollars, while more than a billion dollars was spent on the construction of plants devoted to the manufacture of miscellaneous war material.

While this article deals specifically with the Missouri Pacific as a typical example, with changes in locations and figures it could apply to any western railway, all of which went through similar experiences during the war. A similar article on a typical eastern railway will appear in an early issue.—EDITOR.

There were 31 major Army-Navy flight or related phases of air training projects located along the M. P., including glider bases, basic training schools, gunnery schools, engine mechanics' schools, bombardier and navigator training schools. There were also some 18 of the largest army camps, enemy internment camps and relocation centers on the M. P. In addition, four large government hospitals were constructed, as well as eight war plants classed as "heavy" manufacturing, devoted to making shell casings, ships and ship sections, or structural steel for the construction of other war industries.

Among the 37 major plants were 11 refineries specializing in high-octane gasoline, 9 synthetic rubber producers, and 17 chemical plants. The huge magnesium plant at Velasco, Tex., and the alumina plant at Bauxite, Ark., were also served by the M. P., as well as 13 ammunition factories. The list of war plants also included aircraft factories, engine works and aircraft parts manufacturers.

The War Department borrowed engineering forces to build new lines to serve camps

Engineering Department Busy

The engineering department of the M. P. was called upon in many ways, not only for actual construction work, but also for advice in building railway lines within the plants and designing loading and unloading facilities. One of the biggest jobs was the construction near New Orleans of a dock for handling explosives.

Prior to America's entry into the war small shipments of war explosives had regularly left this country by way of the Port of New Orleans. Handling facilities were such that railroad shipments arriving for transfer to vessels anchored off shore had to be loaded on barges and lightered to the ships. As substantially heavier quantities of war explosives were routed through this port, the original facilities were found inadequate. Moreover, in the interest of safety, the government desired to avoid the lighterage method of loading, and the Coast Guard and port authorities would not permit handling of large shipments of explosives within the New Orleans Port limits.

Accordingly, construction of dock facilities at Concord spur on the west bank of the Mississippi river, approximately 12 miles by railroad from the city of New Orleans, was authorized late in 1941. The dock consists of a timber wharf 440 ft. long, with the usual landing and mooring clusters. It is 30 to 40 ft. wide. The railroad track serving the dock is depressed four feet below the dock level to make car floors level with the dock floor. The minimum depth of the water along the face of the dock at extreme low water level in the Mississippi is 35 ft. and the dock has a freeboard in extreme high water of approximately 6 ft. A storage track having a capacity of 44 cars is located along the levee.

The entire dock track is some 1,800 ft. in length, about 1,000 ft. of which is on the ground, and the remainder on trestle, and provides space for spotting 10 cars alongside the dock, which permits serving simultaneously all hatches in a ship moored alongside. From 150 to 200 tons per hour could be handled, providing the ship's facilities were adequate to receive this amount in its magazines.

The Concord spur and loading dock are on the New Orleans & Lower Coast, a part of the Missouri Pacific system, and there are direct connections with the Texas & Pacific, the T. P.-M. P. Terminal and Southern Pacific on the west bank of the river, and through the Terminal with the east side lines. Explosives moving from west side lines to the N. O. & L. C. did not pass through the heavily built up areas in the city of New Orleans.

In addition to the handling of explosives at the Concord spur dock, the facilities were used to load aircraft on ships. The Alvin Callender landing field is located one mile from the dock, and planes were flown there and loaded on ships for overseas service.

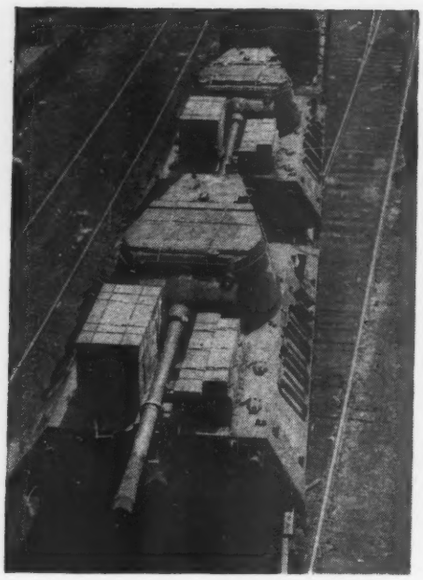
The Belle Chasse yard of the N. O. & L. C. had long before the war been used for the shipside dock of "Seatrains" handling cargoes to and from Havana, Cuba. Shortly after the advent of war the Seatrain service was discontinued, and the Belle Chasse facilities were used to handle the Concord dock and a new ammunition depot built at Victory spur nearby. Early in 1945 the Seatrain service was resumed and the added traffic through the Belle Chasse yards made necessary the extension of storage trackage there. The yard was a concentration point for explosives which averaged from three to six shipments per month, consisting of as many as 100 to 200 carloads per cargo, plus other wartime freight. A storage track some 3,100 ft. long and a crossover 204 ft. long were built from the Concord dock northward to the north end of the Belle Chasse yard, increasing the former capacity of 261 cars to 321 cars. The cost of the dock and new storage track and crossover was approximately $96,000.

The M. P. supplied large quantities of relay rail and scrap to the government and to war plants. On government directives the M. P. supplied war plants, in 1942, 1943 and 1944, with 2,574,640 ft. or 243.8 track-miles, of relay rails. The extension of M. P. tracks into war plants required an additional 470,654 ft., or 44.6 track-miles. The Pine Bluff arsenal, at Pine Bluff, Ark., was the largest of these projects, requiring 378,000 ft. or 36 track-miles of relay rail. Scrap supplied to the government by the M. P., from 1942 to November 1, 1945, amounted to 379,197 tons.

Passenger Problems

The M. P. served 43 Army air bases and 26 camps, and between 1941 and November 1, 1945, handled 6,964,613 members of the armed forces traveling under government orders. During the same period 2,594,351 meals were served on M. P. dining cars on government meal orders. These figures do not include furlough traffic nor officers paying cash for transportation.

To handle this large troop movement, a great deal of special service was required. For example, at Alexandria, La., near which three big camps were located, 500 soldiers leaving on fur-



Trains of war materiel rolled constantly over M. P. lines

loughs showed up without warning 25 minutes before train time. It was obviously impossible to sell that many tickets to distant points before the train left, so the soldiers were permitted to board the train without tickets. A passenger representative established a "ticket office" on a table in the diner and sold $5,000 worth of tickets between Alexandria and Little Rock.

On another occasion 300 soldiers showed up at St. Louis without warning, bound for Kansas City. There was no extra equipment available in St. Louis. However, the Missouri River "Eagle," a streamliner, arrived from Omaha on its regular run at 5:40 p. m. A special crew of car cleaners got it ready and it departed with the soldiers aboard at 6:05 p. m. Arriving at Kansas City at 11:00 p. m., it was immediately deadheaded back to St. Louis and departed on its regular run at 8:50 a. m.

The M. P. was called up to handle the movement of five divisions, three inbound and two outbound, at one time at Alexandria. On December 13, 1941, the M. P. was suddenly called upon to move the entire First division from Camp Robinson, Little Rock, Ark. Despite the fact that, at the time, everyone concerned was inexperienced in troop movements of this magnitude, 63 trains were promptly dispatched at an average of one train every 2 hr. 8 min. These were all mixed trains, consisting of passenger cars and flat cars. Later, to speed loading and unloading, flat cars were spotted at Army camps to give soldiers an opportunity to practice.

To increase the utilization of coaches, fast turn-arounds became routine. As examples, the coaches arriving at St. Louis on train No. 8 at 11 p. m. were regularly serviced and run south in train No. 7, at 11:59 p. m. Coaches arriving on train No. 14 at 10:15 p. m. were regularly sent west on train No. 9 at 11:50 p. m.

Before the system of staggering furloughs went into effect, the M. P. was called upon to handle 10,000 soldiers on one day from Alexandria. These were largely destined to Illinois, Wisconsin and Michigan points and were handled in 10 trains; 1,000 soldiers in each train. Ten passenger representatives set up a tent at the camp and between 7 a. m. one morning and 3 a. m. the next sold $128,000 worth of tickets. In addition, they distributed 10,000 stencils showing how the return movement was to be consolidated at such points as Chicago and Detroit.

Each of the thousands of troop trains was accompanied by M. P. representatives. Since all experienced passenger men were extremely busy, these riders were usually freight solicitors from offline offices. This served the dual purpose of relieving the passenger men for ticket-selling duties and of giving the offline freight men a thorough, on-the-ground knowledge of the railway they represent. At first, both a traffic and an operating representative rode each troop train, but, later, as the movements became routine, only the traffic representatives accompanied the trains.

Operating Problems

In common with other such officers, the general superintendent of transportation of the M. P. maintained constant touch with the Washington military officers. Demands for special service on various cars were of daily occurrence and hundreds of so-called "MTX" trains were run. These consisted of specially fast trains containing cars of government material that had to be delivered at some destination, usually a port, at a specific time. When, as frequently happened, the arrival dates could not be met by regular schedules, special trains had to be run, without regard to tonnage.

Car supply, particularly as to open-top cars, presented many problems. The total ownership of open-top cars by the railways would have been inadequate except for complete co-operation. On the M. P., for example, when moves requiring open-top cars were in prospect, connecting and competing lines, as well as the Car Service division of the A. A. R., were called upon to aid in supplying the demand and the M. P. reciprocated when such movements were in prospect on other railways.

There were also complicated operating problems brought about by the location of camps, air bases and industries at what had previously been small and relatively unimportant stations. The case of Knobnoster, Mo., referred to in the opening paragraphs of this article, was typical of literally hundreds of similar operations on various parts of the system. In the first place, the M. P. was required to build two miles of railway from the main line to the camp through the hills, a large part of it on a two per cent grade. The existing 13-car house track had to be materially enlarged, as is evidenced by the fact that at the air base 78 miles of concrete in roadways and strips, from 28 ft. wide on up, were laid in a few months and on one day 256 cars assigned to the concrete-mixing plant arrived at Knobnoster.

This volume of business required the building of several tracks and spurs for team track space, but fortunately labor was available so that the whole new layout could be built in two days. The personnel at this station consisted of one agent, but this force had to be increased rapidly. The crews which were put on to haul the materials into the air base consisted entirely of newly-made engineers and conductors and student brakemen. However, because of adequate and competent supervision, there were no personal injuries at Knobnoster during the entire period of intensive operations there.

An operation that involved several hundred miles of main line of the Missouri Pacific between Texas and northern and eastern connections was the movement of symbol oil trains. In peace-time the Missouri Pacific handles only a few scattered carloads of petroleum and petroleum products, but between August 1, 1942, and August 31, 1945, this railway handled a daily average of 691 cars of such freight. This, of course, involved also the return movement of a like number of empty tank cars. Both the empty and loaded oil trains were scheduled at high speeds, and these operations were such as to require a great deal of ingenuity in maintaining the fast schedules, while at the same time not delaying important war freight on the busy main lines.

Troop movements in solid trains eventually became routine matters on the M. P., particularly after the War Department had arranged to stagger such movements wherever possible. Early in 1942 the situation was different and the M. P., upon one occasion, was called upon to handle a troop train every 30 minutes for 48 continuous hours over a secondary main line. This required, among other things, the opening of 22 additional telegraph offices. Branch lines for 200 miles around were stripped of telegraph operators for two days to staff such offices.

Water facilities to service the engines on these trains had to be built overnight, and it was further necessary to build a large number of temporary train order signals within a space of six hours. Despite handicaps, these troop trains were

handled over the railway in fast time.

Prior to the outbreak of hostilities, the War Department, through the United States Army Engineers, called upon various railroads in the United States to sponsor the formation of military railway organizations under a program of organization prescribed by the War Department. The organizations set up by the War Department comprised a Railway Grand Division (analogous to a general superintendents' organization), an Engineer Railway Operating Battalion (analogous to a division organization), and Engineer Railway Shop Battalions (analogous to mechanical organizations on railroads where heavy repairs are made).

The Missouri Pacific sponsored the 759th Engineer Railway Operating Battalion, and the officers of this battalion were chosen from personnel employed by the railroad. This battalion was activated at Camp Claiborne, La., on September 1, 1942. After receiving preliminary military training and some railway training on the Camp Claiborne-Camp Polk military railway, the 759th was transferred to Van Buren, Ark., at which point the War Department had constructed a small cantonment, later known as Camp Jesse Turner; and after arrival at that point the 759th was to receive railway training by actual operation on the Central division of the M. P.

Effective November 16, 1942, the railway units were taken from the jurisdiction of the Corps of Engineers, United States Army, and assigned to the then newly organized Transportation Corps, and the designations of the organizations were changed from "Engineer Railway Operating Battalion" and "Engineer Railway Shop Battalion" to "Railway Operating Battalion" and "Railway Shop Battalion." The 759th departed from Van Buren, Ark., early in May, 1943, for overseas duty.

Training Soldier-Railroaders

It being the desire of the War Department to afford training to its railway operating and shop units in the technical end of railway operations, the War Department negotiated with various railroads for the purpose of permitting these organizations to receive such technical training by actual on-the-ground work at certain points on such railroads. The Missouri Pacific agreed with the War Department that it would afford to the Army its trained personnel and the use of its land, buildings, bridges, right-of-way, equipment, tools, enginehouses and shops for the training of Army railroaders. This program involved the training of soldiers in all phases of railroad operations by placing them alongside Missouri Pacific employees in each particular line of duty.

The Railway Operating Battalions were made up of headquarters and a headquarters company which included men who would perform as yardmasters, trainmasters, engine and crew callers, telegraphers, dispatchers, yard clerks and personnel for administering the battalion; "A" Company, comprised of men destined to perform maintenance of way duties; "B" Company, made up of soldiers assigned to maintenance of equipment work; and, "C" Company, composed of the men designated for duty in train, engine and yard work. The members of Railway Shop Battalions were assigned to prepare themselves for work in shops where heavy and general repairs were to be made to both locomotives and cars.

Pursuant to understandings reached between the Missouri Pacific and the War Department, training in all classes of railway work was afforded to members of the Armed Forces in the following territories:

(a) On the Arkansas, Central and Central Kansas divisions between Little Rock, Ark., and Osawatomie, Kan., and between Coffeyville, Kan., and Conway Springs, including the shop facilities at North Little Rock and Coffeyville.

(b) Missouri, Arkansas, Memphis, Little Rock, Louisiana and Illinois divisions; between Little Rock, Ark., and the southerly limits of St. Louis Terminal division; Little Rock and Texarkana; Bald Knob and Briark; Little Rock and Alexandria, La.; Poplar Bluff, Mo., and Dexter Junction; North Junction, Ill., and Dupo; Dexter, Mo., to Illmo; Monroe, La., and the northerly limits of Alexandria; southerly limits of Alexandria and Kinder; and Monroe, La., and McGehee, Ark., including shop facilities at Alexandria.

The 759th Railway Operating Battalion received training between December 11, 1942, and early in May, 1943. Following the departure of the 759th from Van Buren, the 748th, 733rd and 734th Railway Operating Battalions received training. In addition, towermen from the 714th and 770th Railway Operating Battalions were trained at Sallisaw, Okla., and South Coffeyville. The 757th Railway Shop Battalion and a portion of the 765th Railway Shop Battalion received training in maintenance at North Little Rock shops.

The 706th Headquarters Railway Grand Division was established in the M. P. passenger station building at Little Rock. Small groups of men from the 737th, 749th, 752nd and 770th Railway Operating Battalions were given training at Little Rock in water service duties. Train and enginemen of the 770th Railway Operating Battalion were given training in Diesel locomotive maintenance and operation at the St. Louis terminal. In addition to members of the Transportation Corps Replacement Training Center located at Camp Claiborne, La., members of the following railway operating battalions were trained, between Alexandria and Monroe, and between Alexandria and DeQuincy via Kinder: the 712th, 714th, 718th, 725th, 752nd and 770th Railway Operating Battalions. Certain members of the armed forces were given training in railroad wrecking crew service between Monroe, La., and McGehee, Ark., and mechanical men were given training in the enginehouse at McGehee in addition to mechanical training being afforded at the Alexandria shops.

Arrangements were entered into between the Missouri Pacific, the Western Union Telegraph Company and the War Department under which members of the armed forces received training in construction, maintenance, repair, renewal and replacing of telegraph facilities.

Auxiliary Services

In addition to actual transportation, the M. P. and its employees were extremely active in furthering the war effort. The Missouri Pacific's service flag showed 6,106 stars, including 84 gold stars. A drive for blood donors resulted in the contribution of more than one gallon of blood each during the war by a large number of employees. During the war bond sales campaigns the Missouri Pacific averaged over-subscribing their quota by 15 per cent. Women's clubs of Missouri Pacific employees did a large amount of work for the U. S. O. and such employees contributed many hours of time entertaining service men.

Through the employees "booster clubs," an unusually complete and effective Victory Garden campaign was carried on each year throughout the war. The M. P. employees regularly exceeded their quota for contributions to the Red Cross. The fact that producing good transportation was vital to victory was continually kept in the minds of employees. Posters were displayed which made it clear that shells and guns were of no use unless delivered promptly to ports, that the men who were doing our fighting were entitled to the best attention possible. When the wounded commenced to trickle back from Africa, arrangements were made with the War Department for some of those who were recovering to appear at especially arranged "booster" meetings and to tell how important it was to the men at the front that there be no breakdown or faltering on the home front. The public was invited to some of these meetings and at one place, Cotter, Ark., with a population of only 1,500, there were more than 1,200 persons present. In all of these activities the publicity department took the lead, and the officers of the company were unstinting in giving their time and labor towards making these activities a success.

COMMUNICATION . . .

Eighty Miles an Hour Sixty Years Ago

NEW YORK

TO THE EDITOR:

Speed is perhaps not the most essential characteristic of a locomotive, but it is easily one of the most spectacular. Bursts of speed of 120 or even 130 m.p.h. are unofficially reported for some modern locomotives, but it is still felt that at 80 m.p.h. an engine is rolling right rapidly. A well authenticated report of speeds up to 83 m.p.h. made sixty years ago seems to be worth recalling.

In the early 1880's the New York, West Shore and Buffalo Railway was built from Weehawken, N. J., to Buffalo, N. Y., ostensibly as a competitor of the New York Central. At the outset no expense was to be spared. The motive power built to the designs of Howard Fry,* superintendent of motive power, and John Player, mechanical engineer, was to represent the most advanced practice of the day. At that time discussion of the respective merits of English and American locomotives was active and the West Shore locomotives made many interesting contributions to American practice, as both Howard Fry and John Player had early mechanical training in England, followed by practical experience in this country.

The evidence for the high speeds referred to above is to be found in the *Railroad Gazette* of July 17, 1885, which gives complete details of a run made with a special passenger train taking some prominent officers of the Baltimore & Ohio, the Wabash, the Grand Trunk, and of the West Shore from Buffalo to New York. No special preparation was made for the run, as notification was only given a few hours in advance. The train was light, consisting of a West Shore baggage car, an official West Shore car, and an official B. & O. car, together weighing 76 tons behind the tender.

The total distance of 426 miles from East Buffalo to Weehawken was made in an elapsed time of 9 hr. and 23 min. Nineteen stops totaled 68 min., giving a net running time of 8 hr. and 15 min., with an average running speed of 52 m.p.h. On the longest non-stop run from East Buffalo to Genessee Junction, 61 miles were covered in 56 minutes, start to stop, an average of 72 m.p.h. The contemporary account says that several of the railroad men on board kept an accurate record of the run and reported that a number of individual miles were made in 43 sec. each (84 m.p.h.) and that over the greater part of the run many miles were made in 45 to 48 sec. each, or 75 to 80 m.p.h.

J. D. Layng, general manager of the West Shore, had a very elaborate study of the run made by the late F. G. Cole, who was at that time starting his engineering career on the West Shore. This complete record was published by the *Railroad Gazette*. It leaves no doubt as to the fact that the speeds quoted above were actually made. In publishing the record, the claim was made that the run was the fastest ever made in the United States or Canada and that it had probably never been equalled anywhere.

The train was handled successively by four 4-4-0 locomotives of the dimensions shown in the table, each locomotive running over a division in accordance with the then current practice. The locomotive for the West end of the Hudson Division was an anthracite coal burner with a grate area of 34 sq. ft. The other three, using bituminous coal, had 17 sq. ft. of grate area. Except for the necessary differences in firebox, both classes of locomotives were similar.

Comparison with the modern locomotives which handle passenger trains from Buffalo to New York show that now the net running time for the 403 miles from Buffalo to Harmon, N. Y., is about 8 hr. 15 min., the same as that of the special of 60 years ago. Train weights are 10 to 12 times as great. Tractive force has increased about four-fold and heating surface in approximately the same proportion, but boiler pressures have gone up from 140 lb. per sq. in. to twice that figure and superheaters and feedwater heaters have been added. The result is that boiler power has increased much more rapidly than the cylinder tractive force. The principles which make high boiler capacity desirable have long been recognized. In 1875, M. N. Forney, then editor of the *Railroad Gazette*, in his "Catechism of the Locomotive," wrote, "It may, therefore, we think, be safely assumed that locomotive boilers should always be made as large as the weight of the locomotive will permit."

While we may admire modern prowess, we must recognize that our predecessors were in their day thoroughly up-to-date and that they understood the principles underlying the art of locomotive design.

LAWFORD H. FRY,
The Locomotive Institute.

* Howard Fry, born January 6, 1846, was killed in a railroad accident in April, 1883, after completion of the locomotives, but two years before the date of the run now dealt with. John Player, who was subsequently mechanical engineer of the Brooks Locomotive Works and later of the American Locomotive Company, is now living in retirement at Dunkirk, N. Y.

Dimensions of 4-4-0 Locomotives of the New York, West Shore and Buffalo Railway

Cylinders, diameter and stroke, in.	18 x 24
Driving wheel diameter, in.	68
Boiler pressure, lb. per sq. in.	140
Rated tractive effort, lb.	16,000
Weight on drivers, lb., anthracite	64,000
bituminous	62,500
Total weight of locomotive, lb.	76,000
Heating surfaces, sq. ft.:	
Tubes	1,084
Flues	128
Total	1,212
Grate area, sq. ft., anthracite	34
bituminous	17

Poster No. 269, which constitutes the February installment of the "All the Year-Every Year Safety Program," now being distributed by the Committee on Education, Safety Section, Association of American Railroads

NEW BOOK . . .

Narrow-Gauge Railways in North Wales, by Charles E. Lee. 136 pages. 9 in. by 6 in. Bound in boards. Published by the Railway Publishing Company, 33 Tothill St., Westminster, London S.W.1, England. Price 8s.

This is another of the carefully documented and painstakingly prepared studies of the beginnings of the railway from the pen of this experienced and energetic investigator. Embellished with illustrations and maps, it traces the development of several narrow-gage lines in the slate-producing area of northern Wales, beginning with a short toll railway built around 1807 by William Alexander Madocks, and concluding with the building in the 1920's of connecting lines forming segments in the unsuccessful Welsh Highland Railway.

Much of the material in this volume appeared originally in English railway periodicals, particularly in connection with the centenary in 1936 of the Festiniog Railway, but it has been revised and supplemented to incorporate fuller information about this and other pioneer lines. The 1 ft. 11½ in.-gage Festiniog has received, the author says, probably twice as much attention as any other narrow-gage railway, not only for its technical contributions and its scenic surroundings, but particularly for its early use and development of the Fairlie articulated locomotives.

The book deals not only with the location and engineering development of the several narrow-gage railways of North Wales, but also with the design and improvement of their motive power and track structures. To a considerable degree it becomes an account of the achievements of a "family of engineering genius," the Spooners, particularly James and his son Charles Easton, whose "regime" on the Festiniog line stretched from its beginning to 1889, and whose talents and technical skill, demonstrated and applied there, affected the development of narrow-gage railways in all parts of the world.

GENERAL NEWS

Profits Help Keep Transport Cost Low

New investment needed to hold costs down when expense keeps mounting

Addressing the annual dinner of the Chamber of Commerce at Binghamton, N. Y., on January 29 William White, president of the Lackawanna, said the railroads must earn reasonable profits to enable them to make investments that would decrease costs, so that through greater efficiency the carriers will not have to pass along to the public all of their mounting operating costs.

The speaker said a recent survey disclosed that the public is opposed to governmental favoritism in transportation. "But a majority believes," he said, "that the railroads receive more assistance than other forms of transportation. The public wants a progressive railroad industry under private ownership, but we fail to realize that a threat to this condition exists.

"In the 1920's the railroads were already protesting against government policies that were undermining their earning power by subjecting them to unfair and unequal regulation, and by subsidizing their competition. Now the railroads have lots of company because many kinds of industry are protesting against actual or threatened application to them of similar policies.

"Railroads are not specialists in transportation. They occupy the whole field; they carry freight of every description, passengers to all destinations, mail to every station, run their trains every day in the year; rain, snow, ice, winds, low ceilings may retard them, but do not stop them, and they do not select their traffic. Railroad transportation is the one indispensable transportation agency. If all other forms of domestic transportation should disappear, the railroads could move the commerce of the country with a fair degree of success; but if the railroads should cease to operate, in spite of the most heroic efforts of the airlines, the motor lines and the waterways, there would ensue a business paralysis too horrible to contemplate."

Discussing competition and the charges for service by various transportation agencies, Mr. White pointed to the necessity for both reductions and increases by the railroads during the post-war years.

"With increased competition from air transportation, buses and the private automobile," he said, "there should be no increase in passenger fares. There should, instead, be some decrease, and there must be better service because to make passenger service pay there must be volume.

"There has been resistance to increasing freight rates principally from O.P.A. and the Department of Agriculture, but with very little opposition from freight shippers, who generally know that the railroads must be allowed to increase freight rates. We will do everything we can to improve our efficiency and decrease our costs, because we don't want to pass on to the public any increased costs that we can overcome by more efficient operation.

"It is no wish of the railroad industry that freight rates be increased; it is a necessity, and the only alternative to reasonable profit is government ownership and operation, and consequent saddling upon the American taxpayers as a whole the deficits that would result. So, to keep our railroads functioning under the system of free enterprise, the problem is reasonable profit that will permit sound investment in facilities and equipment, which will tend always to decrease costs and improve service, to pay a fair wage to employees, to pay a reasonable dividend to stockholders and permit reduction of debt."

"Full Crews" to Return in California

The California Railroad Commission has ordered the reinstatement of the requirement that all trains in that state must be operated with "full crews" beginning on March 1. The rule was suspended for the duration of the war because of a severe shortage of railroad workers.

The decision of the commission was reached following a meeting with management and union representatives at which it was claimed that a general agreement was reached to the effect that the manpower situation has eased sufficiently to end the suspension.

Truman to Get Frisco Dispute

An emergency mediation board appointed to clear up a dispute between the St. Louis-San Francisco and the Brotherhood of Railroad Trainmen, which threatened a strike last January 6, has completed its work and will report its findings to President Truman on February 4. The board was appointed by the president on January 5, one day before the union was to have placed in operation the threatened strike. Several issues were involved in the dispute but neither the road nor officers of the brotherhood made them public. Members of the mediation board are Chief Justice Robert G. Simmons of the Nebraska Supreme court, Associate Justice Luther W. Youngdahl of the Minnesota Supreme court and Justice Henri A. Burque of the New Hampshire Supreme court.

Industry Formula For Labor Harmony

N. A. M. disseminating program proposed by industry at recent conference

The National Association of Manufacturers has issued an 18-page pamphlet summarizing the management program to promote labor peace, as evolved at the President's labor-management conference during November. The pamphlet, entitled "The Public and Industrial Peace," presents a condensation of the industry platform prepared by the industry delegates (which included railroad representation) to the conference, and a brief statement of the legislation needed to implement the industry platform; together with a foreword by Ira Mosher, chairman of the board of the N. A. M.

The industry platform pleads for a genuine collective bargaining between management and the freely chosen representative of the employees. This bargaining, the industry delegates insist, must be conducted in good faith, and entirely under conditions of law and order, and there should be guarantees in the contract prohibiting strikes, lockouts or boycotts during the life of the contract. It is asserted that the activities of employers are regulated and subject to legal action; and that collective bargaining requires that the labor organizations be equally answerable to judicial proceedings for violations of agreements.

The management program declares that "those matters which are clearly the responsibility of management are not subject to collective bargaining." Determination of products, methods, employee selection policy, and discipline fall in this category. Other subjects, about which management must be free to make prompt initial decisions, but which are properly subject to review in accordance with mutually acceptable procedures include: Employee discharge for cause, application of seniority provisions of contracts, and disciplinary penalties. Since "the term 'management' must be defined to include all levels of managerial and supervisory personnel including foremen," the statement insists that "it is, therefore, fundamental that there be no unionization of any part of management." It should also be required that no jurisdictional dispute be allowed to interfere with operations, and that an orderly procedure be established to settle such disputes.

It is urged in the program that every effort be made to settle all disagreements by peaceful collective bargaining. If this should fail, conciliation, or voluntary arbitration (the terms of which are agreeable

(Continued on page 293)

Begin Remodeling of Detroit Station

More convenience and space is objective of $500,000 one-year program

Involving a total cost of $500,000 and several months of planning, a modernization project for the Fort Street Union Station in Detroit, Mich., has been started and is expected to be completed within a year. The work is being carried on by the Walbridge, Aldinger Company, Detroit, under the supervision of M. M. Cronk and O. E. Hager, general manager and chief engineer, respectively, of the Fort Street Union Depot Company.

The station is used by the trains of the Pennsylvania, the Pere Marquette and the Wabash. In addition to trains which the Pere Marquette operates on its own lines, it also operates through trains in and out of the station in conjunction with the Baltimore & Ohio and the Chesapeake & Ohio by way of Toledo, Ohio.

The principal objective of the remodeling plan consists of the removal from the ground floor of many functions not essential to the welfare of the traveling public and which now occupy space badly needed for public accommodations. Under the present set-up, the ground floor is occupied by the ticket office, restaurant, newsstand, Travelers' Aid station, information counter, ladies' room, check room, and the offices of the stationmaster, passenger agent, Pullman agent, ticket agent, station accountants, restaurant kitchen, storeroom and other miscellaneous functions. All of these not considered essential to direct public use will be removed to a newly-constructed second floor, provisions for which will be made by erecting a new ceiling over the waiting room at a height of one and one-half stories. The work will also include building of a new train gate wall with large and direct exits at either end and six large doors leading to the waiting room.

Snow Trains Return

On January 27, the first snow train to run out of New York since the outset of the war left Grand Central Terminal for a one-day excursion on the New Haven into the Berkshire Hills in Massachusetts. Scheduled stops were at Great Barrington, South Lee and Pittsfield, Mass. The New Haven explains that the road's ability to operate any snow trains this season results only from the fact that the equipment used gets back from the snow country in time for late Sunday evening movement of furloughees returning to New London, Providence and Boston. The snow trains, that is, simply utilize what would otherwise be idle time of this equipment.

Sir Harold Hartley Resigns

Sir Harold Hartley—who as vice-president, research, of the London Midland and Scottish Railway (G. B.) traveled widely in the United States and is well known to American railroaders—has resigned his vice-presidency of the London Midland and Scottish and chairmanship of the Railway Air Services to become a member of the board of the British Overseas Airways Corporation. Sir Harold was brought to the L. M. S. in 1930 by the late Lord Stamp, then president of the railway.

Prior to the first World War Sir Harold was a fellow and tutor of Balliol College, Oxford University, and Bedford lecturer on physical chemistry. He emerged from the war a brigadier-general, and in 1930 joined the L. M. S. In recent years he has become increasingly active in the aeronautical field, and during this war was closely associated with the production of aviation fuel and the development of F. I. D. O. (fog dispersal for the safe landing of aircraft).

Carriers and Unions Agree to Arbitration

Possible strike of 1,250,000 men averted by agreement to arbitrate wages

Representatives of the nation's railroads and representatives of 18 of the 20 major employes' labor organizations agreed on January 26 to arbitrate their dispute over new wage contracts. Included among the unions agreeing to the arbitration procedure were all of the 15 non-operating unions and three of the five operating unions, representing a total of more than one and a quarter million men. The Brotherhood of Railroad Trainmen and the Brotherhood of Locomotive Engineers broke off wage negotiations the preceding week and the former organization authorized a strike vote. The engineers were expected to consider the matter of a strike vote about the first of February.

Power of Arbitrators—The agreement of the railways and the 18 labor unions to arbitrate was the result of three weeks' conferences between employees and management held by the National Mediation Board. Under the agreement the employees deferred their request for rules changes and the parties authorized the arbitration board to reject in whole or in part any of their wage demands. Any wage changes made are to be retroactive to January 1, 1946. A further section of the arbitration agreement, applying to the non-operating group only, provides that any increase granted one non-operating union shall be the same in cents per hour as that given any other.

A six-man arbitration board, consisting of two carrier representatives, two men representing the unions, and two neutrals, will hear the non-ops' case, while a three-man board similarly proportioned will de-

Concourse of the Fort Street Union Station as it will appear after being widened and equipped with direct exits at either end and with six large doors leading to the waiting room

cide the case of the ops. Arbitration proceedings are expected to start as soon as the two boards are named, probably about the middle of February. The two boards will sit concurrently during the presentation of the carrier's testimony.

Finality of Award—According to a statement of the National Mediation Board, "this is the first instance in which a group of employers of the magnitude of the American railroads and such a large number of employees have voluntarily submitted the issues of rates of pay to arbitration." Provision for arbitration boards is contained in the Railway Labor Act, sections 5, 7, 8 and 9, the latter section reading in part: "An award acknowledged and filed as herein provided shall be conclusive on the parties as to the merits and facts of the controversy submitted to arbitration, and, unless, within ten days after the filing of the award, a petition to impeach the award, on the grounds hereinafter set forth, shall be filed in the clerk's office of the court in which the award has been filed, the court shall enter judgment on the award, which judgment shall be final and conclusive on the parties." Grounds for impeachment are named as failure to conform to the requirements of the Railway Labor Act, failure to abide by terms of the arbitration agreement reached by the disputants, and fraud or corruption by a member of the board or by either party to the proceeding.

The agreement arises from the demands of the 15 non-operating unions for a general wage increase of 30 cents an hour and of the operating groups for a wage increase of $2.50 per day. The latter organizations, along with the trainmen's and engineers' unions, had also requested 45 changes in working rules in addition to the pay increases. The refusal of the Brotherhood of Railroad Trainmen to defer action of the matter of rules changes and the consequent taking of a strike vote means that, if a strike is authorized, a presidential fact-finding board will probably be appointed to study the dispute and make recommendations for a settlement. After reporting, there would follow a 30-day "cooling-off" period during which the disputants are given an opportunity to accept or reject the recommendations of the board. Under the law, no strike can be called legally until the expiration of the "cooling-off" period.

Parties to Agreement—In conducting the negotiations leading up to the present agreement to arbitrate, Harvey H. Schwartz was chairman of the National Mediation Board, and George A. Cook and Frank P. Douglass the other members. Representing the 15 non-operating unions was B. M. Jewell, as chairman of the committee of unions, while C. J. Goff spoke for the Brotherhood of Locomotive Firemen and Enginemen, H. W. Fraser for the Order of Railway Conductors, and T. C. Cashen and J. P. Brindley for the Switchmen's Union of North America. Representing the railways were three five-men committees from Eastern, Western and Southwestern railroads. Chairman of the regional committees were H. A. Enochs, chairman, executive committee, Bureau of Information, Eastern Railways; D. P. Loomis, executive director, Association of Western Railways; and J. P. Parrish, vice-president, Chesapeake & Ohio, for the Southeastern carriers.

Truman's Statement—President Truman was "highly gratified" upon being advised of the agreement to arbitrate. He issued the following statement on January 26:

"I have just received a telegram from the National Mediation Board, reporting on the conclusion of mediation proceedings in Chicago. A wage dispute between all the 134 principal railroads of the nation and the railroad labor unions had been in the process of mediation for the past three weeks.

"The telegram informs me that an agreement to submit the dispute to voluntary arbitration in accordance with the Railway Labor Act has just been concluded between the railroads and 18 of the 20 railroad labor unions.

"As the Mediation Board pointed out, 'this is another demonstration that collective bargaining is still functioning in this industry that has operated under the Railway Labor Act for the past 20 years.'

"I am highly gratified at this report from the National Mediation Board and congratulate the board and the parties concerned on their fine accomplishment."

N. Y.'s G. C. T. Has New Record

The number of railroad passengers in and out of Grand Central Terminal, New York, on the New York Central and New Haven combined in 1945 totaled 64,719,574, or 1,956,714 (3.1 per cent) greater than 1944, the previous record year. July established a record for one month with 5,611,187 passengers. The highest record for passengers handled in one day was made on November 21, 1945, the total being 240,078, as against the previous high of 237,769 made December 26, 1944.

Steel Strike Closes I. C. Shops

The far-reaching effects of the general steel strike upon industry and workers in other fields was demonstrated at Chicago last week when President Wayne A. Johnston of the Illinois Central announced that because of the steel situation orders had been given to close temporarily all of the road's heavy repair shops. This shutdown has affected approximately 2,000 shop workers.

In addition to division shops at various points of the Illinois Central the order also stopped all activities at the road's car repair and rebuilding shops at Macomb, Miss., Memphis, Tenn., and Burnside, Ill., and Centralia, as well as the locomotive shops at Paducah, Ky.

Describe New S. P. Trains

Following the announcement of the proposed inauguration of streamlined train service by the Southern Pacific between San Francisco, Cal., and Portland, Ore., and the construction of new trains, to be known as the "Shasta Daylights" for this service, further details have been released by the road. The Southern Pacific also plans a number of important improvements in its "Cascades" sleeping trains, as reported in the *Railway Age* of January 26.

The "Shasta Daylights" trains will each consist of 14 cars, powered by Diesel-electric locomotives, and besides the coaches will include baggage car, diner, kitchen car, coffee shop, tavern car and observation-parlor car. The diner-kitchen-coffee shop will form a three-car unit, with the kitchen in the center. An important innovation will be the installation of a new type of window which will afford passengers a wide-angle view, vertically as well as horizontally.

Advertising Men Elect Officers

At a meeting of the National Association of Railway Advertising Agents, held in the Union League Club at Chicago on January 19, the following officers were elected for 1946:

President, A. A. Dailey, advertising agent of the Atchison, Topeka & Santa Fe; first vice-president, S. E. McKay, advertising agent of the Baltimore & Ohio; vice-president, H. B. Northcott, general advertising manager of the Union Pacific; treasurer, A. W. Eckstein, advertising agent of the Illinois Central. E. A. Abbott and C. D. Perrin, of Poole Brothers, Inc., were elected secretary and assistant secretary, respectively.

Because of the difficulty of obtaining transportation and hotel accommodations, the annual conference was limited to a one-day meeting. For this reason, an extensive docket on post-war planning was pigeonholed to permit the delegates to concentrate on immediate problems brought on by the huge task of returning service men to their homes in various parts of the country from Pacific Coast ports.

M. P. Will Use Astra-Dome Cars

The Missouri Pacific has completed plans to order a number of the General Motors-designed and Budd-built "Astra Dome" cars, one of which was successfully tried out by the Chicago, Burlington & Quincy as a revolutionary change in railroad car design due to its upper deck, which affords passengers a completely unobstructed view in all directions. The dome-constructed roof will be built into three of six lightweight cars now on order for the road's Missouri River Eagle. Each dome, made entirely of glass, will contain 12 elevated seats on each side which can be reached by a short stairway from the coach floor level.

Seaway Called "Unemployment Project"

On January 24, seventeen railroad unions, representing practically all organized railroad employees in New Jersey, came out in solid opposition to the construction of the proposed St. Lawrence Seaway and power project urged by President Truman in his recent budget message to Congress. Excerpts from a statement issued by George F. Conway, New Jersey State Legislative Representative, Order of Railway Conductors, in behalf of the unions and signed by them, contained the following warnings:

"[The project] will cost a billion to build and millions to run . . . lost traffic and jobs . . . rob America's railroads of $100,-

000,000 a year in freight revenue . . . equivalent to a lifelong layoff for some 20,000 American railroaders . . . a toll-free waterway would cost millions more tax dollars every year to operate and maintain . . . water-power electric plant, part of the project, would be in a region already well served by coal-burning power plants . . . still further injure the coal mining industry, the biggest customer of America's railroads. That is why the waterway has been called 'a permanent unemployment project.'"

B. & O. Facilities on Staten Island Damaged by Fire

Severe damage was caused to the Baltimore & Ohio's two piers and other facilities at St. George, Staten Island, New York, by fire on January 25. Completely destroyed were pier 5, together with 33 stored cars of freight and seven box cars on the pier, one annex and a marine repair shop. Pier 6 and five barges were severely damaged. The loss of Navy freight stored on pier 6, which is leased partly to the Bethlehem Steel Company, is estimated up to $1,000,000, less salvage.

The B. & O.'s Staten Island facilities are used to handle export and import traffic. Utilizing the undamaged part of pier 6 and by means of temporary repairs, the railroad has been able to resume handling its full volume of traffic at this point. Service on the Staten Island Rapid Transit (B. & O. subsidiary) was not interrupted. No plans have been formulated as yet for replacing the destroyed facilities.

Freight Car Loadings

Loadings of revenue freight for the week ended January 26 totaled 709,130 cars, the Association of American Railroad announced on January 31. This was a decrease of 40,345 cars or 5.4 per cent below the preceding week, a decrease of 50,495 cars or 5.6 per cent below the corresponding week last year, and a decrease of 101,760 cars or 12.5 per cent below the comparable 1944 week.

Loading of revenue freight for the week ended January 19 totaled 749,475 cars, and the summary for that week, as compiled by the Car Service Division, A. R. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, January 19

District	1946	1945	1944
Eastern	152,187	146,552	157,912
Allegheny	156,494	164,969	171,732
Pocahontas	56,838	54,044	55,072
Southern	120,372	126,406	121,466
Northwestern	85,713	85,396	92,317
Central Western	122,589	127,936	128,235
Southwestern	55,282	72,269	71,916
Total Western Districts	263,584	285,601	292,468
Total All Roads	749,475	777,572	798,650
Commodities			
Grain and grain products	54,925	46,027	58,857
Live stock	11,027	15,411	16,164
Coal	184,725	172,253	181,898
Coke	10,071	15,135	15,410
Forest products	33,070	39,111	43,360
Ore	9,300	11,907	14,363
Merchandise l.c.l.	117,389	98,021	101,009
Miscellaneous	328,968	379,707	367,589
January 19	749,475	777,572	798,650
January 12	772,558	783,060	779,531
January 5	652,457	683,398	769,629
December 29	.....	506,151	584,876
December 22	.....	688,300	762,972
Cumulative total, 3 weeks	2,174,490	2,244,030	2,347,810

In Canada.—Carloadings for the week ended January 19 totaled 67,912, as compared with 69,528 for the previous week and 65,767 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

Totals for Canada:	Total Cars Loaded	Total Cars Rec'd from Connections
January 19, 1946	67,912	34,529
January 20, 1945	65,767	35,194
Cumulative Totals for Canada:		
January 19, 1946	188,140	97,626
January 20, 1945	181,396	95,594

Equipment Installed in 1945

Class I railroads put 38,987 freight cars and 643 locomotives in service in 1945, according to the Association of American Railroads. This was a decrease of 1,405 cars and a decrease of 295 locomotives compared with the number installed in 1944. In 1943 the railroads put in service 28,708 new freight cars and 773 new locomotives.

Of the new freight cars installed in the past calendar year, there were 18,977 plain box, 2,134 automobile, 5,971 gondolas, 8,489 hopper, 1,218 flat, 1,860 refrigerator, 239 stock cars, and 99 miscellaneous cars. The new locomotives installed in 1945 included 109 steam and 534 Diesel-electric, compared with 329 steam, one electric and 608 Diesel-electric in 1944.

Class I roads on January 1 had 37,160 new freight cars on order. On the same date last year they had 36,597 on order. This year's January 1 total included 13,566 plain box, 3,653 automobile box, 4,391 gondolas, 13,997 hoppers, which included 3,201 covered hoppers, 735 refrigerator, and 100 miscellaneous cars.

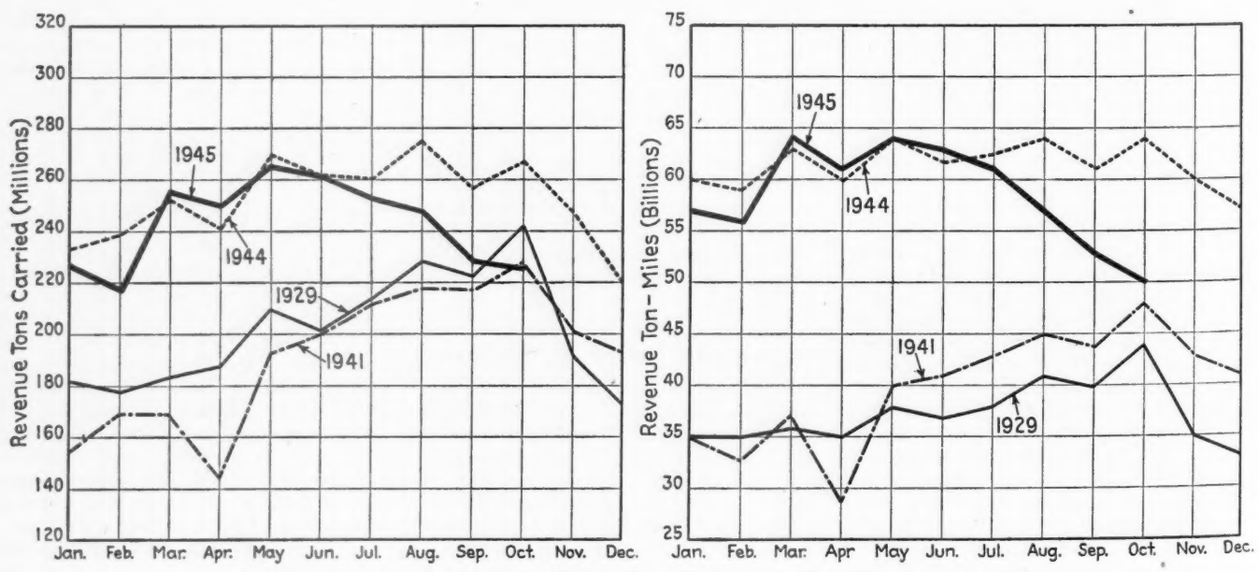
Railroads also had 471 locomotives on order on January 1, which included 92 steam, six electric, and 373 Diesel-electric locomotives. On January 1, 1945, they had 468 locomotives on order which included 66 steam, two electric and 400 Diesel-electric.

New Airline Reservations Plan; Terminal Study Announced

Arrangements for immediate confirmation of return-trip reservations are now being tried out in some cities by airlines, according to a recent announcement from the Air Transport Association. In another recent statement the Association revealed that Joseph D. McGoldrick, former comptroller of New York City and "a leader in the development of Idlewild Airport," will head up a study of airport terminal facilities in "typical" cities "in order to determine the feasibility of joint airline ground operations."

The plan to provide improved facilities for confirmation of return-trip reservations contemplates that blocks of space, based upon the average demand for round-trip accommodations on the routes involved, will be set aside to be drawn upon by the reservation office at the point of origin, thus enabling that office to give the passenger immediate assurance that return-trip accommodations will be available.

The plan will be introduced by the ma-



Revenue Tons and Revenue Ton-Miles—1945 Compared with 1929, 1941 and 1944

jority of the airlines "as they receive additional planes providing extra seats and making possible this service," A. T. A. said. It added that "for years in the transportation field" passengers seeking return-trip reservations have found it necessary "to wait hours and sometimes days while the carrier telegraphed the point of destination and awaited a reply."

The statement announcing the airport terminal study said that the overall object of the survey would be "to achieve economies in airline ground operations and provide better service for the public." Among the services to be studied, with a view to the establishment of joint facilities, are those affecting loading, unloading and handling of passengers, baggage, mail and cargo; lounges and rest rooms; cleaning service, towing, fueling and cleaning planes, incidental maintenance, and heating of hangars.

The survey was authorized this week at a Washington, D. C., meeting of A. T. A. directors, who at the same time formally elected and installed the Association's new executives—Admiral Emory S. Land, president; Robert Ramspeck, executive vice-president; and General Milton W. Arnold, vice-president, operations and engineering.

Truckers Continue "Localities Without RRs" Propaganda

In preparing educational material for distribution to the schools, the American Trucking Associations are continuing to make use of the misleading contention that more than 50,000 communities in the United States have no railroad service and, thus, "are almost entirely dependent on motorized transportation for their very existence." The inaccuracy of the method by which this list of communities, allegedly deprived of railroad service, was compiled was fully exposed in the *Railway Age* of September 23, 1944, in an article by Dr. C. S. Duncan. The A. T. A. educational material also includes a U. S. map, showing in black those areas allegedly 25 or more miles from a railway, a presentation which, superficial examination suggests, may exaggerate the area deprived of immediate service by rail.

The A. T. A. presentation appears to be based on a table in the 1944 edition of "Motor Truck Facts," an Automobile Manufacturers Association publication. This table, as Dr. Duncan reported, was evidently compiled from a standard U. S. atlas, which lists every locality with a local name, including real estate subdivisions, post office substations, and many others which are not specifically listed as having railroad service. When the number of localities shown with railroad service is subtracted from the total of all localities, the difference is assumed to be the total which have no railroad service.

But what is a "locality" without railroad service? It appears that in the city of Baltimore alone the A. M. A. counted 40 "communities" without railroad service. In the four most populous counties of Tennessee, the atlas which seems to be the source of this compilation does not list railroad service for 176 "communities"; but, of these, 25 are branch post office substations within the cities of Memphis, Nashville, Chattanooga, and Knoxville. There is no point in these four Tennessee counties which is more than eight miles from a railroad.

Even if compilations such as this were accurate, their actual significance would be slight. The fact that a shipment has to move even more than 25 miles by truck before it reaches a railroad does not alter the fact that it is only the railroad which provides nation-wide transportation service for all commodities. The community remote from a railroad is just as dependent on this nation-wide rail service as the community directly served by rail.

Industry Formula For Labor Harmony

(*Continued from page 289*)

to and understood by both parties), may be employed. In cases involving a public emergency, it is suggested that a "fact-finding panel" could be appointed by the state governor or the President of the United States (the appointing power to be selected according to the scope of the emergency). Such a panel should have no power of subpoena, and should be charged with hearing both sides of the controversy, placing the facts before the public without recommendation. To this end it is suggested that an impartial and independent conciliation and arbitration service be offered to labor and management by the Department of Labor.

To accomplish the objectives of the industry program (to establish a system under which labor and management can engage in fair collective bargaining) legislation will be required to place them in an equal position before the law. The activities of labor organizations should be controlled, and their responsibilities defined, as are those of employers. Both management and labor should be required to practice collective bargaining with full regard for the legal rights of individuals and the protection of property against unlawful acts. To establish equity, present laws should be modified so that labor organizations are bound by their contracts, and may be effectively sued for breaking them, as employers can now be sued.

If the labor organizations cannot establish some orderly means of settling jurisdictional disputes, legislation will be needed to maintain order while these problems are being worked out. The Wagner act should be modified to exclude all managerial personnel and foremen from the definition of "employee," and those matters which are clearly the function of management should be excluded from the area of legally required collective bargaining.

Report Shows British Railways' Safety Record High in 1944

According to T. D. Slattery, general traffic manager of British Railways in New York, a recent governmental report showed a passenger on British trains in 1944 stood only one chance in 150,000,000 of being killed in a train accident. There were only 12 fatalities and 33 seriously injured, and this during a year when tracks and equipment deterioration added to the burdens of greatly increased passenger traffic. Prior to the war, the annual average in fatalities was 17 for the years 1935-1939. Annual war-time averages from 1940 through 1944 were 27 deaths and 37 injuries.

Among railway employees, it was revealed, the casualty rate was also "remarkably low" with the proportion of fatalities to passenger and freight-train miles worked being about one to 29,000,000.

Mr. Slattery noted further that due mainly to the blackout 124 passengers were killed boarding or alighting from trains, in crossing accidents, and the like, while 292 employees were killed in such personal accidents.

The aforementioned figures were exclusive, he said, of casualties due to enemy action. It is revealed for the first time that in more than 9,000 bomb cases reported, nearly 1,000 passengers and railway employees were killed and 4,000 seriously injured between June 1940 and March 1945.

Strikes Tie Up 30,000 Cars

Replying to inquiries about the matter, the Association of American Railroads stated this week that approximately 30,000 freight cars are tied up under load as a result of strikes throughout the country. The A. A. R. pointed out that this tie-up comes at a time when the car supply is extremely tight.

Included in the 30,000 cars are 24,000 open tops and 6,000 box cars. The largest number is tied up in the Pittsburgh area—11,906 cars of which 11,600 are open tops. Next in turn come the Chicago district where 7,274 cars are tied up, and the Detroit district, 5,089 cars.

As indicated by the figures, the strikes have had a much greater effect on open tops than on box cars. At the same time the extent to which they tie up any box cars aggravates a situation wherein the shortage has been averaging 7,000 cars a day.

American University Offering Short Course for Railroaders

American University, Washington, D. C., will conduct a "rail transportation institute" during the month of March "to meet the needs of young men and women who wish to grow into executive positions on the roads by which they are employed." Veterans who are former employees of the railroads or who are interested in jobs in the transportation field may also apply for admission, the announcement pointing out that such applicants will enjoy benefits of the so-called GI bill of rights.

Directed by Professor L. M. Homberger, the curriculum is planned "to present an over-all view of the transportation industry and to broaden the employees' understanding of the industry's problems by relating the many departments of rail operation to a pattern of efficient transportation service."

The program includes a course on basic problems of transportation with emphasis on rail service, its history, mechanics, operation, traffic, management, and regulation; a series of special studies in current railroad problems including manpower, selling transportation, public relations, Interstate Commerce Commission organization and procedures, current ratemaking issues, legal and financial problems, statistics and cost-

finding, new technical developments such as electrification, signaling, radio, Diesels, new steam locomotives, car design, maintenance of way, and maintenance of equipment.

A field program will take the students to a large station, classification yard, large shop, large port with rail facilities, airport, and truck terminal. A further sequence of studies during the month will deal with the competitors of the railroad industry. Supper meetings with national leaders of government and industry will complete the March curriculum.

The institute will open on March 3, and the university's announcement said that "a number of major railroads are enrolling employees from different sections of the country." It was also stated that the course will be offered "with the cooperation of the Association of American Railroads."

The fee for tuition will be $110, and the cost of textbooks is put at approximately $20. The university, "within the limits of space available," will assist students in arranging for their living accommodations. Applications for admission should be made to Dr. Homberger, The American University, 1901 F street, N. W., Washington 6, D. C., the last registration day being February 17.

Santa Fe Truck Service Sought

An application of the Santa Fe Transportation Company (a wholly owned highway subsidiary of the Atchison, Topeka & Santa Fe) has been filed with the California Railroad Commission seeking authority to launch an over-the-highway freight truck service to and from San Francisco, Cal., Oakland, Los Angeles and San Diego by way of the San Joaquin valley. The company based its request upon the ground that inauguration of the proposed through truck service is the only practicable method of providing the character of service now required and demanded by its shipper and receiver patrons.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, P. O. Box 5522, Chicago 80, Ill.

AMERICAN ASSOCIATION OF BAGGAGE TRAFFIC MANAGERS.—E. P. Soebbing, 1450 Railway Exchange Bldg., St. Louis, Mo.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St. New York 6, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—Miss Elise LaChance, Room 901, 431 S. Dearborn St., Chicago 5, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago 5, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—Miss Elise LaChance, Room 901, 431 S. Dearborn St., Chicago 5, Ill. Annual meeting, September 17-19, 1946, Hotel Stevens, Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York 6, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—O. K. Quivey, B. & O. R. R., Baltimore 1, Md.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 12-14, 1946, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—Virginia Tanner, Baltimore & Ohio Magazine, Room 1202, B. & O. Bldg., Baltimore, Md.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—J. P. Nye, Tower Bldg. Washington 5, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York 18, N. Y.
Railroad Division.—E. L. Woodward, Railway Mechanical Engineer, 105 W. Adams St., Chicago 3, Ill.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York 17, N. Y.

AMERICAN WOOD-PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington 5, D. C. Annual meeting, April 23-25, 1946, Netherland Plaza Hotel Cincinnati, O.

ASSOCIATED TRAFFIC CLUBS OF AMERICA, INC.—R. A. Ellison, Cincinnati Chamber of Commerce, 1203 C. of C. Bldg., Cincinnati 2, O.

ASSOCIATION OF AMERICAN RAILROAD DINING CAR OFFICERS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago 5, Ill.

ASSOCIATION OF AMERICAN RAILROADS. — H. J. Forster, Transportation Bldg., Washington 6, D. C.
Operations and Maintenance Department.—Charles H. Buford, Vice-President, Transportation Bldg., Washington 6, D.C.
Operating-Transportation Division. — L. R. Knott, 59 E. Van Buren St. Chicago 5, Ill.
Operating Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.
Transportation Section.—H. A. Eaton, 59 E. Van Buren St., Chicago 5, Ill.
Communications Section.—W. A. Fairbanks, 30 Vesey St., New York 7, N. Y.
Fire Protection and Insurance Section.—W. F. Steffens, New York Central, Room 3317, 230 Park Avenue, New York 17, N. Y.
Freight Station Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5 Ill.
Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.
Protective Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.
Safety Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.
Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 12-14, 1946, Palmer House, Chicago Ill.
Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 12-14, 1946, Palmer House, Chicago, Ill.
Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill.
Signal Section.—R. H. C. Balliet, 30 Vesey St., New York 7, N. Y.
Mechanical Division.—Arthur C. Browning, 59 E. Van Buren St., Chicago 5, Ill.
Electrical Section.—J. A. Andreucetti 59 E. Van Buren St., Chicago 5, Ill.
Purchases and Stores Division.—W. J. Farrell (Executive Vice-Chairman), Transportation Bldg., Washington 6, D. C.
Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago 5, Ill.
Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington 6, D. C.
Car Service Division.—E. W. Coughlin, (Assistant to Chairman), Transportation Bldg., Washington 6, D. C.
Finance, Accounting, Taxation and Valuation Department—E. H. Bunnell, Vice-President Transportation Bldg., Washington 6, D. C.
Accounting Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C.
Treasury Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C.
Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington 6, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Alton R. R., 340 W. Harrison St., Chicago 7, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—E. C. Gunther, Duff-Norton Mfg. Co., 122 S. Michigan Ave., Chicago 3, Ill.

CANADIAN RAILWAY CLUB.—C. R. Crook, 4415 Marcil Ave., N. D. G., Montreal 28, Que. Regular meetings second Monday of each month, except June, July and August, Mount Royal Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, MO.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis 3, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel De Soto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—F. H. Stremmel, 6536 Oxford Ave., Chicago 31, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Ralph J. Feddor, 2803 N. Campbell Ave., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—R. E. Mann, 1840-42 Hotel Statler, McKinley Square, Buffalo 5, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—H. J. Hawthorne, Union Railroad, East Pittsburgh, Pa.

EASTERN CAR FOREMAN'S ASSOCIATION. — W. P. Dizard, 30 Church St., New York 7, N. Y. Regular meetings, second Friday of January, February (Annual Dinner), March, April, May, October and November, 29 W. 39th St., New York, N. Y.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—C. M. Lipscomb, 1721 Parker Street, North Little Rock, Ark.

MASTER BOILER MAKERS' ASSOCIATION. — A. F. Stiglmeier, 29 Parkwood St., Albany 3, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Ben Smart, 7413 New Post Office Bldg., Washington 25, D. C. Annual meeting, November 12-15, 1946, Los Angeles, Cal.

NATIONAL ASSOCIATION OF SHIPPERS' ADVISORY BOARDS.—W. B. Shepherd, Aluminum Company of America, Gulf Bldg., Pittsburgh, Pa.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE.—Edward F. Lacey, Suite 450, Munsey Bldg., Washington 4, D. C.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago 4, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston 11, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September. Hotel Vendome, Boston, Mass.

NEW YORK RAILROAD CLUB. — D. W. Pye, 30 Church St., New York 7, N. Y. Regular meetings, third Thursday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y.

NORTHWEST CARMEN'S ASSOCIATION. — E. N. Myers, Minnesota Transfer Ry., 1434 Iowa Ave., St. Paul 4, Minn. Regular meetings, first Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul, Minn.

PACIFIC RAILWAY CLUB. — William S. Wollner, P. O. Box 458, San Rafael, Cal. Regular meetings, second Thursday of each alternate month, at Palace Hotel, San Francisco, Cal., and Hotel Biltmore, Los Angeles, Cal.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago 3, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 308 Keenan Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 624 W. Adams St., Chicago 6, Ill.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, Room 811, Utilities Bldg., 327 S. La Salle St., Chicago 4, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 308 Keenan Bldg., Pittsburgh, Pa.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury, Battery Company, 30 Church St., New York 7, N. Y. Meets with Communications Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 610 Shell Bldg., St. Louis 3, Mo. Annual meeting, May 28-29, 1946, Netherland Plaza Hotel, Cincinnati, O.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—Miss Elsie LaChance, Room 901, 431 S. Dearborn St., Chicago 5, Ill. Annual meeting, September 17-19, 1946, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with A. A. R. Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga., Savannah, Ga.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto 2, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q. and C. Company, 59 E. Van Buren St., Chicago 5, Ill. Exhibit in connection with Roadmasters' and Maintenance of Way Association Convention, September 16-19, 1946, Hotel Stevens, Chicago, Ill.

UNITED ASSOCIATIONS OF RAILROAD VETERANS.—Roy E. Collins, 112 Hatfield Place. Port Richmond, Staten Island 2, N. Y.

WESTERN RAILWAY CLUB.—E. E. Thulin, Suite 339, Hotel Sherman, Chicago, Ill. Regular meetings, third Monday of each month, except January, June, July, August and September, Hotel Sherman, Chicago, Ill.

A list of current publications of interest to the transportation industry will be found on page 311.

With the Government Agencies

Agencies Agree on Train Radio Control

F.C.C. concedes regulation to I.C.C., but reserves licensing powers

The Federal Communications Commission favors legislation giving the Interstate Commerce Commission regulatory control over railroad train-communication systems, provided it is made clear that installations involving raido must be made in accordance with the permit and license requirements of the Communications Act of 1934 and rules and regulations issued pursuant thereto by F. C. C. This was revealed in a recent letter wherein F. C. C. Chairman Paul A. Porter gave Chairman Wheeler of the Senate committee on interstate commerce F. C. C.'s views on S. 1537, the bill sponsored by Mr. Wheeler to give the I. C. C. regulatory control over train communications, including power to require railroads to install telegraph, telephone, radio, inductive, or other systems.

Enactment of the proposed legislation, Mr. Porter said, is recommended by F. C. C. "first, because it disposes of any question of the authority of the Interstate Commerce Commission to order the installation of such systems pursuant to section 25 of the Interstate Commerce Act, and, secondly, because the bill would delegate to the experienced railroad regulating agency, the Interstate Commerce Commission, the responsibility for determining the manner and extent to which train radio communications systems may be installed and operated (in supplementation of or in substitution for existing signaling devices) or discontinued."

Previously Mr. Porter had outlined F. C. C. activities in the field of railroad radio, noting these activities culminated recently in the adoption of rules for the establishment of railroad radio service. "Now that railroad radio service will shortly be in operation on a regular, non-experimental basis as far as this commission is concerned, it is appropriate to require the railroads to use radio or inductive communication systems if found necessary in the public interest," Mr. Porter added.

In order to eliminate any possibility that the I. C. C. might impose upon a railroad radio specifications at variance with F. C. C. rules, and to remove any suggestion that an F. C. C. license would not be required for an installation ordered by the I. C. C., Mr. Porter would add to the bill's paragraph (b) the following additional proviso:

And provided further, That the installation and operation of any train communication system or portion thereof employing radio for the transmission of energy or communications or signals and requiring a radio station permit or license under the provisions of the Communications Act of 1934, as amended, shall be effected in accordance with the provisions of that act and such applicable rules and regulations as may be issued pursuant thereto by the Federal Communications Commission.

Lower Auto Rates in East Are Suspended by I. C. C.

Certain tariff schedules which would establish a classification exception rating of 75 per cent of first class for new automobiles in carloads over the lines of certain roads in Official territory have been suspended until August 24 from their January 24 effective date by an order of Division 2 of the Interstate Commerce Commission in I. & S. No. 5384.

This suspension followed a protest filed by the American Trucking Associations. It does not affect the application of the rating of 85 per cent of first class, effective January 24, prescribed by the commission in its No. 28190 proceedings as the maximum reasonable basis of rates on carload shipments of new automobiles throughout the country, but prevents at least until further action of the commission the maintenance on the roads concerned of the 75 per cent basis previously prescribed. The commission's action in No. 28190 was reported in *Railway Age* of November 24, 1945, page 876.

Women Railway Employees

Class I railroads had 109,424 women employees as of the middle of October, 1945, a decrease of 7,883 from the mid-July figure of 117,307, and the proportion of women employees to total employees fell slightly from 8.08 per cent to 7.83 per cent in that period, according to the latest report on the subject by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission.

The total of 109,424 women employees as of the middle of October compares with an October, 1944, figure of 115,704. The total of all employees at the same times was, respectively, 1,396,703 and 1,410,285.

As compared with mid-July, there were declines in the mid-October figures for women employees in every employment group. The largest number continues to be included in the professional, clerical and general category, for which the mid-October total was 77,546, as compared to mid-July's 82,042. There were 17,137 women employed in maintenance of equipment and stores as compared to 19,485 in mid-July; 13,055 as compared to 13,717 in transportation work, other than train, engine and yard service; and 1,417 as compared to 1,756 in maintenance of way and structures.

Other women employees as of mid-October included 19 in the executives, officials and staff assistants group; 47 switchtenders and hostlers; and 203 in train and engine service.

Act in Northwest Box Car Shortage

I.C.C. names Kendall agent to augment supply; other car service orders

Because there is a shortage of box cars suitable for loading export grain and grain products in Oregon, Washington, Idaho and Montana, and "certain railroads are not supplying empty box cars in sufficient number to alleviate the shortage," the Interstate Commerce Commission, by Service Order No. 439, has appointed W. C. Kendall, chairman of the Car Service Division of the Association of American Railroads, its agent with authority to require movement "without delay" of suitable cars to stations in the specified area from any railroad in the United States. The order was effective January 24 and will expire June 30, unless otherwise directed.

Following his designation as I. C. C. agent for this purpose, Mr. Kendall reminded all railroads that the order provides authority "if it should be needed" for preferential movement of empty box cars to the prescribed territory for loading to meet the requirements of the government program for supplying wheat for the relief of destitute areas in Europe. It has been reported, he noted, that inland transportation has failed recently to meet established ocean shipping schedules at North Pacific ports. Mr. Kendall also called attention to a January 25 statement by President Truman bearing on the subject, addressed to various government officials, including the director of the Office of Defense Transportation. This said, in part:

"I have become increasingly concerned over the shortages of vitally needed supplies to liberated countries. I am particularly alarmed at what now appears to be a world-wide shortage of wheat. I am informed that many of the countries of Europe now possess less wheat than is necessary to maintain distribution, even though their bread ration is down to a starvation level. . . .

"Everything possible must be done to provide the necessary handling, inland transportation, port facilities, and ocean transportation required to move all the wheat and flour which can be provided. We must reduce to a minimum the quantity of wheat used for non-food purposes. Also, all other efforts must be made to increase wheat for food and for this purpose the possibility of increasing the extraction ratio in milling should be explored."

The commission has limited to 5 days the free time on box cars held at or out of ports for forwarding directions after loading from vessels, except where less time is provided by tariff, by Service Order

No. 438, effective January 27 to March 15 unless otherwise directed. Sundays and holidays are to be included in computing such free time. Railroads are required by the same order to place cars of this description in outbound trains within 24 hours of receipt of forwarding directions.

Following modification of the terms of Service Order No. 104, which provides for the substitution of westbound refrigerator cars for box cars for carload shipments in the direction of their travel, as noted in *Railway Age* of January 26, page 252, the commission has suspended until further notice, as of January 28, the authorization of such use of refrigerator cars. This suspension was ordered in Amendment No. 1 to Third Revised Service Order No. 104.

Effective February 15, Service Order No. 222 and supplements, which relate to the routing of non-transit grain and grain products, have been set aside, amendments to the order and supplements having been issued for that purpose.

Emergency Board Report

The White House has made public the report of the emergency board appointed recently by President Truman to investigate a dispute between the St. Louis-San Francisco and its employees represented by the Brotherhood of Railroad Trainmen. The principal issue involved the brotherhood's demand for cancellation of an agreement permitting use of road crews in certain yard work, and the board recommended that this matter be settled by direct negotiations. Eleven other issues involved matters normally handled by the National Railroad Adjustment Board, and the emergency board recommended that the normal course be followed.

Would Hold Unions Responsible for Their Acts

Senator Byrd, Democrat of Virginia, on January 23 introduced a resolution (S. J. Res. 133) to provide for the incorporation of labor organizations and their registration with the Securities and Exchange Commission, such registration to include submission of an annual report setting forth financial and other information about union activities, including the salaries of officers. The resolution, which was referred to the Senate judiciary committee, provides also that labor organizations can be sued for civil damages, either for breach of employment contracts or for the "unlawful" damage or destruction of property.

Troop Train Speed Order Lifted

The Office of Defense Transportation has announced the revocation, effective January 25, of its General Order 59, which provided that railroads operating wholly or partly west of the Mississippi river should move troop trains or empty deadhead equipment assigned to troop movement at operating speeds equal to those established for normal passenger train schedules. The order was effective December 19, 1945, and was designed to assure prompt handling of such equipment during the peak period for the return of service men through Pacific coast ports.

While the troop movement continues heavy, it was explained, arrivals on the West coast are diminishing, and it was found to be desirable to revoke the minimum speed order so that the movement of deadhead troop equipment on passenger train schedules would not continue to interfere unduly with "vital freight traffic." It was stated that movement of troops eastward from Pacific ports is continuing at regular passenger train speeds.

Allotment of Plane Space for Troops Ends February 15

The Office of Defense Transportation has announced the cancellation, effective February 15, of its General Order 58, under which air lines operating east from Pacific coast points have been required to make available for service men returning from overseas not less than 70 per cent of passenger space on planes destined to eastern cities.

This order became effective December 3, 1945, and was the only outstanding order affecting air traffic. Air lines are reported to have carried about 20,000 men per month across the country under its provisions, and to that extent relief was afforded western railroads in handling the peak movement of returning troops. Revocation was decided upon, it was explained, because the volume of such traffic, though still heavy, has passed its peak, and because an increasing number of new troop sleepers are becoming available, more than 800 now being in service of the 1,200 under order for delivery by the end of last year.

Defective Frog Causes Passenger Train Derailment

The derailment on December 4, 1945, of the northbound 10-car west coast section of "The Southland," at Chatsworth, Ga., on the Louisville & Nashville single-track main line from Atlanta to Knoxville, Tenn., was caused by a defective switch frog, according to the report of an Interstate Commerce Commission investigation under the supervision of Commissioner Patterson. There were no fatalities, but 35 passengers were injured. The tender and first seven cars were derailed, and the left sides of four of these cars struck the sides of box cars standing on a parallel industry track, resulting in considerable damage.

The track is tangent in the vicinity of the accident. The authorized speed for this train was 60 m.p.h., and it was moving about 58 m.p.h. when derailed. There was no indication of an obstruction on the track or of dragging or otherwise defective equipment on the train. Trains are operated by timetable, train orders and an automatic block signal system.

The report indicated that the front wheels of the rear truck of the tender were derailed at the frog of a siding switch 2,015 ft. north of the station at Chatsworth, but continued in line with the track 356 ft. to the facing-point turnout of an industry track, where the general derailment occurred. Examination of the frog showed that base stops No. 1 and No. 3 and the cuff of hold-down No. 1 were broken off and the cuff and stop-bar of hold-down No. 2 were missing. The breaks in base stop No. 1 and the cuff of hold-down No. 1 had developed from old fractures which were 75 per cent complete or more.

It was testified that a car of a freight train had been derailed at the frog concerned about 13 days prior to this accident. The track supervisor and section foreman then examined the frog and saw that the cuff and stop bar of hold-down No. 2 were missing. They did not consider the frog unsafe for use, and no action was taken to restrict the speed of trains passing over it, though a new frog was ordered for replacement. Loss of the missing parts permitted excessive movement of the spring rail, the report said, and partial fractures in the cuff of hold-down No. 1 and base-stop No. 1 resulted. Their failure under the engine allowed the spring wing rail to shift enough for a wheel of the tender to drop into the throat of the frog.

St. Lawrence Hearings

Hearings on Senate Joint Resolution 104 to provide for approval of the United States-Canadian agreement for development of the St. Lawrence seaway and power project will open February 18 before a subcommittee of the Senate committee on foreign relations. The subcommittee is headed by Senator Hatch, Democrat of New Mexico.

As noted in the *Railway Age* of October 6, 1945, page 574, S. J. Res. 104 is a bipartisan proposal offered Majority Leader Barkley, Democrat of Kentucky, on behalf of himself and nine other senators. It was introduced on October 2, 1945, to be followed the next day by a message wherein President Truman called upon Congress for "speedy approval" of the St. Lawrence agreement. The joint-resolution approach, which would bring favorable action by a majority vote of both branches of Congress, avoids the necessity for obtaining the two-thirds Senate vote required for ratification of a treaty.

Information on Peru's Railways

As a part of its Industrial Reference Service, the Department of Commerce has issued a 12-page, 9 in. by 12 in. booklet on the railways of Peru. The text consists of a discussion of the location, ownership, physical characteristics, equipment, operation, and general financial condition of these railways; a railroad map of Peru; and the following data on each of the railroads: Purchasing channels; length, main line and total; gage; rail weight and length of sections; crosstie material, size, and spacing; number, length and construction of bridges; number and average length of tunnels; minimum curve radius and maximum grade; brakes and signaling equipment; number of locomotives and passenger, box, flat, gondola, hopper, and tank cars; classification of freight; location and detailed description of repair shops; territory served; and importance of the railroad.

The report reveals that the Peruvian Corporation (British) owns 54 per cent of the total mileage, including two of the most important railroads, the Central del Peru and the Sur del Peru. Of the remainder, 30 per cent, mostly minor or unprofitable railroads, are owned by the Peruvian government; and the rest, consisting primarily of industrial and plantation rail-

ways, are owned by various domestic and foreign interests. Difference in gage has made it almost impossible for these railroads to form a well integrated system.

The booklet states that most highway development in Peru, including the Peruvian section of the Pan-American highway, has been intended to parallel and compete with existing railways, rather than to complement them with connections and feeder service. It is claimed that the economic future of the Peruvian railways depends on the degree to which highway facilities are integrated with the railways.

Show Cause Proceeding Revived After Collision

The occurrence on November 11, 1945, of a rear-end collision between a freight and a passenger train on the Western Pacific near Carbona, Cal., has led to further consideration by the Interstate Commerce Commission of an order served on that road in 1941 to show cause why it should not be required to install "an adequate block-signal system" in the territory involved. Action was deferred at that time in view of the road's contention that installation of signals in another territory (the Feather River canyon line) was more urgently required. That installation, including a Centralized Traffic Control system, has been accomplished (as described in *Railway Age* of June 23, 1945, page 1108), and the commission has now ordered a hearing on the show cause order still outstanding.

The accident near Carbona occurred at 4:52 a. m. on the road's single-track main line between Stockton, Cal., and Oakland, where trains are operated by timetable and train orders, there being no block system in use. During the 30 days preceding the collision, the average daily movement was 29.4 trains. Maximum authorized speeds were, for freights, 40 m.p.h.; for passenger trains, 50 m. p. h.

The preceding train concerned was Second 53, westbound, made up of a locomotive, 63 freight cars, caboose and another engine. This train had stopped on the tangent main track, preparing to enter a siding nead Carbona, its rear end being about 1.41 miles east of the station. As it slowed down for this stop, the flagman dropped a lighted 10-min. fusee from the rear platform of the caboose, but he was unable to make sure it continued to burn because the pusher engine obstructed his view.

The following train, passenger Extra 177 West, consisted of two engines, 6 Pullman sleeping cars, 7 troop sleeping cars, 1 dining car, 1 kitchen car, and 1 caboose. No train order had been issued restricting its authority to proceed. The headlight of the first locomotive was lighted and the enginemen were on the lookout, but they observed no warning signals before the engineer discovered the rear of the freight about 400 ft. ahead. The following train was then moving about 35 m.p.h., and its speed was reduced by an emergency brake application to about 25 m.p.h. before the collision occurred. The caboose of the freight was demolished and destroyed by fire and the rear engine and rear car were badly damaged. Both engines of the passenger were badly damaged, the engine truck and tender of the leading engine being derailed. One employee was killed and 105 passengers and 13 employees were injured.

Testimony by employees during the investigation did not agree as to whether the marker lights on the tender of the rear engine of the freight were lighted. It appeared that they should have been visible, if lighted and with clean lenses, about 5,600 ft., yet the enginemen of the following train said they saw no marker lights. The flagman of the freight was preparing to go to the rear of his train to afford protection when the collision occurred, about 1 min. after it stopped. Examination of fusees found on the track afterwards led to the conclusion stated in the report that the fusee dropped by the flagman was extinguished when it struck the ballast.

Discussing the circumstances, the report commented that, in the territory involved, "the only provision for spacing following trains is by the time-interval method enforced by operators at open stations, and by flagmen's signals. The rules require that a following train must be spaced at least 10 min. behind a preceding train. In this case the preceding train passed Lathrop, the last open office, 13.4 miles east of Carbona, 10 min. before the following train departed from that station. However, the time-spacing method in use does not provide means for spacing trains except at open offices, and the collision occurred before the trains reached Carbona, the next open office, 1.41 miles west of the point of the accident.

"These trains passed the interlocking tower at S.P. Crossing, 0.79 mile east of the point of the accident, about 3 min. apart. However, the operator-leverman at S.P. Crossing is not required to report the passage of W.P. trains, or to space trains of this carrier. The operator-leverman said when he observed that the preceding train was stopping he held the westward home signal of the interlocking in stop position for Extra 177 until the speed of that train had been considerably reduced. If an adequate block system had been in use in this territory, the crew of the following train would have received definite information that the preceding train was occupying the main track in the same block."

Murray W. Latimer Resigns from Retirement Board Chairmanship

Murray W. Latimer, chairman and "public" member of the Railroad Retirement Board since its organization in 1934, has resigned from that position, the White House announced last week. Mr. Latimer's present five-year term would have expired on August 29, 1947.

The White House announcement said that Mr. Latimer would continue to serve as research director of the guaranteed annual wage study being conducted by a subcommittee of the advisory board of the Office of War Mobilization and Reconversion (see *Railway Age* of July 28, 1945, page 181). Prior to his resignation he had been the only survivor of the Retirement Board's original membership, the late President Roosevelt having failed to reappoint former labor and management representatives as their terms expired. The present labor representative, Julius G. Luhrsen, replaced Lee M. Eddy, while the present management representative, Frank C. Squire, replaced M. Roland Reed, who in turn had replaced the original management representative—James A. Dailey.

Mr. Latimer's most prominent recent activities have included his advocacy of pending legislation embodying the Railway Labor Executives' Association program for liberalizing the Railroad Retirement and Railroad Unemployment Insurance acts. At last year's Congressional hearings on this program, railroad management and the Brotherhood of Locomotive Engineers (which had not at that time gone along with the R. L. E. A. program) protested against these Latimer activities which they regarded as undue "partisanship" on the part of the "public" member of the board.

Accidents Lead to I. C. C. Show Cause Orders

Orders to show cause why additional protective devices should not be installed in localities where certain train accidents have occurred have been served on the railroads concerned by the Interstate Commerce Commission. One such order, directed to the Atchison, Topeka & Santa Fe and returnable by February 25, is the outcome of an investigation of a rear-end collision December 13, 1945, near Cheto, Ariz. The second order, served on the Wabash, Peoria & Eastern (New York Central System), and Chicago & Eastern Illinois, and returnable by April 2, has resulted from an investigation of a side collision between trains of the two roads first named therein at Danville Junction, Ill., on December 6, 1945.

The Santa Fe accident occurred on that road's double-track main line between Gallup, N. M., and Barstow, Calif., in territory where trains moving with the current of traffic are operated by automatic block signal indications, but at the time the eastward track was out of service and the two eastbound passenger trains involved were operating on the westward track under rules providing for the spacing of trains, there being no block system in use for such movements. The commission's report of its investigation, prepared under the supervision of Commissioner Patterson, concluded with the recommendation that the road provide an "adequate block system" for operation of trains against the current of traffic, and such recommendation would be made effective, if the terms of the show cause order are prescribed, as to its "double-track lines."

Because of fog and falling snow, visibility was so restricted that trains were moving at reduced speeds. The collision occurred at 2:10 a. m., while the preceding train (operating as the third section of No. 4, the "California Limited") was moving about 15 m.p.h. and the following train (the first section of No. 24, the "Grand Canyon Limited") about 35 m.p.h. There was an ascending grade, varying from 0.11 to 0.6 per cent, and a 1 deg. 30 min. curve to the left in the line immediately west of the point of the collision. The flagman of Third No. 4 had dropped lighted 5-min. fusees from time to time as his train pro-

Selected Income and Balance-Sheet Items of Class I Steam Railways

Compiled from 132 reports (Form IBS) representing 136 steam railways
(Switching and Terminal Companies Not Included)

All Class I Railways

Income Items	For the month of October 1945	For the month of October 1944	For the ten months of 1945	For the ten months of 1944
1. Net railway operating income	$54,484,408	$98,011,449	$821,396,493	$941,950,139
2. Other income	14,325,802	14,860,123	149,474,325	149,340,272
3. Total income	68,810,210	112,871,572	970,870,818	1,091,290,411
4. Miscellaneous deductions from income	1,263,991	2,702,577	25,208,420	32,875,886
5. Income available for fixed charges	67,546,219	110,168,995	945,662,398	1,058,414,525
6. Fixed charges:				
Rent for leased roads and equipment	12,037,089	12,888,829	121,677,236	130,993,275
Interest deductions[1]	32,919,757	33,945,487	322,146,522	338,311,883
Other deductions	115,286	118,060	1,122,771	1,285,965
Total fixed charges	45,072,132	46,952,376	444,946,529	470,591,123
7. Income after fixed charges	22,474,087	63,216,619	500,715,869	587,823,402
8. Contingent charges	2,249,832	2,796,226	27,519,431	28,202,389
9. Net income[2]	20,224,255	60,420,393	473,196,438	559,621,013
10. Depreciation (Way and structures and equipment)	28,150,350	27,280,171	277,744,680	267,502,989
11. Amortization of defense projects	109,945,503	17,042,773	391,227,824	154,630,146
12. Federal income taxes	35,506,557	119,222,793	671,604,242	1,136,902,052
13. Dividend appropriations:				
On common stock	18,898,771	14,458,204	122,311,366	109,596,899
On preferred stock	9,168,199	4,673,272	36,346,063	39,394,651
Ratio of income to fixed charges	1.50	2.35	2.13	2.25

All Class I Railways

Selected Asset and Liability Items	Balance at end of October 1945	Balance at end of October 1944
17. Expenditures (gross) for additions and betterments—Road	$190,987,272	.....
18. Expenditures (gross) for additions and betterments—Equipment	232,572,955	.....
19. Investments in stocks, bonds, etc., other than those of affiliated companies (total, Account 707)	544,328,552	$589,498,249
20. Other unadjusted debits*	205,391,392	382,833,491
21. Cash	1,224,980,337	1,270,838,401
22. Temporary cash investments	1,740,577,476	1,793,351,486
23. Special deposits	205,944,395	199,603,934
24. Loans and bills receivable	519,570	427,202
25. Traffic and car-service balances—Dr.	41,337,225	44,862,851
26. Net balance receivable from agents and conductors	111,082,718	150,209,092
27. Miscellaneous accounts receivable	552,001,964	629,553,293
28. Materials and supplies	603,616,267	606,075,451
29. Interest and dividends receivable	38,112,099	30,795,738
30. Accrued accounts receivable	275,244,109	87,845,931
31. Other current assets	45,148,985	61,359,612
32. Total current assets (items 21 to 31)*	4,838,565,145	4,874,922,991
40. Funded debt maturing within 6 months[3]	190,961,735	235,350,458
41. Loans and bills payable	11,361,361	12,138,386
42. Traffic and car-service balances—Cr.	150,675,853	204,234,653
43. Audited accounts and wages payable	445,716,168	458,357,039
44. Miscellaneous accounts payable	203,804,925	143,877,226
45. Interest matured unpaid	64,738,828	54,727,087
46. Dividends matured unpaid	3,756,834	3,336,887
47. Unmatured interest accrued	59,641,275	68,726,130
48. Unmatured dividends declared	29,625,235	15,324,936
49. Accrued accounts payable	225,936,409	96,479,388
50. Taxes accrued	1,402,270,343	1,927,369,904
51. Other current liabilities	125,657,980	117,510,753
52. Total current liabilities (items 41 to 51)*	2,723,185,211	3,102,082,389
53. Analysis of taxes accrued:		
U. S. Government taxes	1,241,082,510	1,765,373,147
Other than U. S. Government taxes	161,187,833	161,996,757
54. Other unadjusted credits*	411,476,244	442,403,193

[1] Represents accruals, including the amount in default.

[2] After deduction of the following amounts to create reserves for land-grant deductions in dispute: Oct. 1945, $2,435,100; Oct. 1944, $3,600,350; 10 months of 1945, $37,913,931; 10 months of 1944, $38,119,116. Net income is also affected by charges to the amortization of defense projects accounts of $99,892,226 for October 1945 and $201,656,519 for the ten months of 1945 in excess of normal accruals, and credits to railway tax accruals of $70,966,509 and $148,656,429, respectively, resulting from the shortened period of amortization.

[3] Includes payments of principal of long-term debt (other than long-term debt in default) which will become due within six months after close of month of report.

* Because of changes in the Accounting Classifications effective October 1, 1945 and the failure of certain carriers to restate their 1944 figures on the new basis, the figures for 1945 and 1944 are not comparable.

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

ceeded, and the following train had stopped for fusees until they burned out, the last stop being in the vicinity of the station at Cheto, about 3 miles west of the point of the collision. The enginemen of First No. 24 said they saw no other fusee or warning until they perceived the markers of the preceding train about 100 ft. ahead, too late to reduce speed.

No fatalities resulted from the accident, but 77 passengers and 17 employees were injured. None of the equipment of either train was derailed, but all except the fifth of the 15 cars in the preceding train were more or less damaged and the engine and four of the 14 cars in the following train were considerably damaged.

Commenting on the circumstances, the report noted that the rules required that a 10-min. interval be maintained between trains when the preceding one was a passenger, although "the fusees furnished flagmen are of the 5-min. type." After the last fusee encountered by the following train had burned out "there was no provision for maintaining the prescribed time interval between the trains involved," while the speed of the following train was about 20 m.p.h. faster than that of Third No. 4.

While the westward track was being used as single track at the time of the collision, operations "simulated movement against the current of traffic," the report observed, but the method of operation for such movements "does not provide equivalent protection" to that afforded by the automatic block signal system for normal movements. "If the manual block system had been in use for movements against the current of traffic in this territory," it added, "the following passenger train would not have been permitted to enter a block occupied by any train." Consequently the cause of the accident was stated as "failure" of the railroad to provide "adequate safeguards for the movement of trains against the current of traffic."

The Danville Junction collision occurred at 1:23 p. m. at a crossing at grade of the single-track line of the Peoria & Eastern and the parallel lines of the Wabash and the Chicago & Eastern Illinois, these being double-track and single-track, respectively. The trains involved were a 4-car P. & E. passenger, No. 13, westbound from Indianapolis, Ind., to Peoria, Ill., and a Wabash freight, Second No. 82, made up of engine, 48 cars and caboose, running eastbound on the eastward main track on the line from Decatur, Ill., to Fort Wayne, Ind. P. & E. trains were operated by a manual block system, while Wabash trains were operated by timetable, train orders and an automatic block signal system. The tracks of both lines involved are tangent in the vicinity of the crossing. The grade is 0.82 per cent descending for the P. & E. train and 0.798 per cent ascending for the Wabash train.

Movements over the crossing were controlled by a leverman located in an adjacent building, being governed by a tilting target signal mounted on a mast 13 ft. south of the center line of the P. & E. track and 22 ft. west of the center line of the Wabash eastward track. The blade of the target, 30.5 ft. above the rails, was 13.5 ft. long and 13 in. wide. Its middle portion was painted yellow, while the ends were painted red and equipped with red electric bulbs for night use. When this target was set in horizontal position, it indicated proceed for P. & E. trains; in diagonal position, proceed for Wabash trains; and in vertical position, proceed for C. & E. I. trains. A stop sign was located 457 ft. east on the P. & E. line and 718 ft. west on the Wabash. Trains were required to move prepared to stop short of a train or obstruction.

The P. & E. train had stopped at the stop sign east of the crossing, and under authority of a proceed aspect of the target signal was moving over the crossing at about 10 m.p.h. when it was struck by the Wabash train. This train had stopped in the vicinity of the stop sign, and then proceeded, passing the crossing signal, which displayed stop for the Wabash line, and struck the P. & E. train while moving about 5 m.p.h. There were no fatalities, but 3 employees were injured. The engine and front truck of the first car of the P. & E. train and the engine and first two cars of the Wabash train were derailed and considerably damaged.

Testimony of employees concerned indicated that when the Wabash train stopped near the stop sign on that line the crossing

signal indicated proceed for the Wabash train. The engineer acknowledged the indication with two short whistle blasts and started his train ahead. The crossing signal could not be seen thereafter from the engineer's position, and the fireman and front brakeman did not observe the signal after the train started. The leverman and a section foreman gave hand stop signals from the vicinity of the crossing, but the engineer did not understand them, and made no move to stop his train until he saw the P. & E. engine on the crossing.

The leverman said he changed the target signal so it would display proceed for the P. & E. passenger train when it neared the stop sign on that line, being under the impression the Wabash freight had not reached the Wabash stop sign. The enginemen of the P. & E. train saw the target signal changed to indicate proceed for their train, so they went ahead. Because of buildings near the crossing, they were unable to see the approaching Wabash train until they were very near it.

This collision resulted from "failure to provide adequate protection" at the crossing, according to the report, which pointed out that the leverman could change the route from one line to another at any time "regardless of track occupancy or time element. If the target had been so arranged," it went on, "that after an approaching train accepts a proceed indication the leverman cannot change the signal to display proceed for another route until the expiration of a prescribed time interval or if a signal for each route over the crossing, properly interlocked, had been provided, this accident would have been averted." The installation of an interlocking was recommended, and the roads involved were directed to show cause why they should not be required to make such installation.

Truck-Forwarder Joint Rail Bill Approved by House Committee

The House committee on interstate and foreign commerce this week ordered a favorable report to the House on an amended version of H. R. 2764, the bill introduced last year by Chairman Lea of the committee to direct the Interstate Commerce Commission to determine as a matter of permanent policy the terms and conditions under which forwarders may utilize the services and instrumentalities of motor carriers. Meanwhile the bill would permit continuance of present joint-rate arrangements between forwarders and motor carriers, which under present law must be discontinued on February 16.

Part IV of the Interstate Commerce Act, which embodies the forwarder regulation provisions, condemned the joint-rate arrangements but provided a transition period for substitution therefor of assembling and distribution rates published by the truckers. As noted above, the present deadline is February 16.

The amended version of the bill includes a new proviso stipulating that in approving forwarder arrangements with truckers "in the case of line-haul transportation between concentration points and break-bulk points in truckload lots," the commission "shall not permit payment to common carriers by motor vehicle of compensation (whether in the form of rates, charges, divisions, or otherwise) which is lower than would be received under rates or charges established under Part II of this act, except to the extent that such lower compensation is found by the commission to be justified by reason of the conditions under which the services and instrumentalities of common carriers by motor vehicle are utilized by freight forwarders, and the character of the services performed by common carriers by motor vehicle and by freight forwarders."

United Mine Workers Wins L. I. Trainmen from B. of R. T.

District 50 of the United Mine Workers of America has supplanted the Brotherhood of Railroad Trainmen as the Railway Labor Act representative of trainmen employed by the Long Island, according to results of a recent election which has been certified by the National Mediation Board. The vote was 573 to 60.

R. E. A. Safety Contest.—The Railway Express Agency on January 1 inaugurated a safety contest, with quarterly awards for the winners ranging from engraved plaques to silver cups. According to L. O. Head, president, the contest is designed to provide incentive in accident prevention. Should winners fall behind in succeeding quarters, their trophies will be passed on to the new winners.

Materials and Prices

The following is a digest of orders, notices and information that have been issued by the Civilian Production Administration, the Office of Price Administration and the Surplus Property Administration, since January 15 and which are of interest to railways:

Hoarding—O. P. A. revised PR 32, under which inventories are limited to prevent hoarding or pre-emptive buying. Bristles, formerly controlled by materials order M-51, are now limited to a 120-day inventory by PR 32. Paper and paper-board, formerly limited to a 90-day inventory under table No. 1 of PR 32, are now subject to a minimum practicable working inventory. Lubricated plug type iron and steel valves were exempt from inventory limitations.

Housing—O. P. A. issued three additional directions to PR 33 to channel gypsum board and lath, common and face brick and structural tile and concrete blocks into the reconversion housing program for veterans. Direction No. 5, which covers gypsum board and lath, provides that the HH ratings shall not be extendible by the distributor to the producer nor shall there by a physical setaside. Directions Nos. 6 and 7, which cover brick, tile and concrete blocks, differ somewhat in that the HH ratings, granted to builders who have qualified under the moderate and low-cost housing program are extendible to producers.

Lumber Stocks—The C. P. A. recently announced that stocks at sawmills and concentration yards at the end of November totaled 3,164,896,000 f.b.m. These stocks were approximately unchanged from those on hand in like position at the end of the preceding month, C. P. A. stated.

This situation, C. P. A. said, indicates that demand pressure is being maintained, and also that these stocks are close to the irreducible minimum. There has been no substantial change in mill and concentration yard stocks since last April.

The total change since Jan. 1, 1945, is a decrease of only 594,104,000 f.b.m., which is an average of less than 1.5 per cent per month.

The level of inventory between October and November prevailed in both the East and the West, although there was some difference in trend in November between the regions in the West. West Coast stocks increased materially, while Western pine stocks dropped slightly.

Mill and concentration yard stocks of softwoods amounted to 2,274,604,000 f.b.m., an increase of 0.2 per cent over the October position. Hardwood stocks increased 1.9 per cent over October to a total of 890,292,000 f.b.m. at the end of November. The increase of all November stocks, as against October stocks, was 0.6 per cent.

Machine Tools—Prompt, equitable disposal of surplus government-owned machine tools already totaling more than $300,000,000 in original cost has been placed at the top of current surplus disposal problems by the Surplus Property Administration. It is estimated that, in addition to the $300,000,000 worth declared by owning agencies as of last November 30, tools costing almost $1,500,000,000 will be available for surplus disposal by July 1, 1947, the representatives of the metalworking industry were told at a recent Washington meeting of the industry advisory committee.

Tools costing $81,000,000 had been disposed of by November 30, leaving an inventory of some $223,000,000. It was pointed out that on November 30, more than 100,000 machine tools of all types were included in the surplus inventory, and within the next year and a half this figure is expected to grow to four or five times as many.

The November 30 inventory was made up of: 27 per cent lathes, 21 per cent boring machines, 18 per cent milling machines, 13 per cent grinding machines and smaller percentages of gear cutters and finishers, drillers, planers and other types.

All surplus machine tools under 25 years of age are sold at a fixed price under a formula that allows for graded deductions from original cost for depreciation.

Under the new "dealer-agency" program, agreements are entered into between the Reconstruction Finance Corporation, the disposal agency, and a qualified person who acts as agent to sell the government's surplus machine tools through regular trade channels, making them more immediately available to prospective buyers. Such agencies are granted a 12½ per cent commission to compensate for costs of handling and selling the tools. No other commissions or discounts are made.

Prices

Hardwood Lumber—Provisions for obtaining ceiling prices for special hardwood lumber items, not specifically priced by O. P. A. regulations for Northern and Northeastern hardwood lumber have been revised. The new price procedure will eliminate continuous filing of applications for prices for special items by mills, O. P. A. pointed out. A manufacturer receiving approval for a price for a special item may continue to use that price for subsequent sales of the same item, without applying again for approval, unless O. P. A. limits its approval in some manner.

Under the old procedure, price approval for a special item was limited to the one order for which the price was sought. On all subsequent sales of the same item, the seller was required to apply again to O. P. A. for approval of a price.

Items affected by the new action include all special items not specifically priced in the Northern and Northeastern hardwood lumber price regulations.

This action was taken in amendments to PR 368 and amendment No. 14 to PR 223,—effective January 29.

Red Cedar Poles—Maximum prices for Western red cedar poles were increased by 25 per cent to the additions permitted for butt-treating. The increase compensates concerns engaged in the manufacture of poles for increased costs of treating pole butts with preservative. It will permit the Western red cedar pole industry to realize a base-period average profit on its overall operations, and will prevent curtailment of production. This move came in amendment No. 2 to PR 554.

Turpentine—Price ceilings are established by O. P. A. on gum turpentine at all levels of production and distribution. The action is taken to prevent a possible inflationary rise in prices following the expected early depletion of government-held stocks. The new ceiling price for producers is 83.5 cents a gallon, f.o.b. still or bulk storage plant. Amendment No. 3 to RPR 561 became effective January 15.

Equipment and Supplies

LOCOMOTIVES

The CHICAGO, INDIANAPOLIS & LOUISVILLE has received authorization from Federal Judge Michael L. Igoe at Chicago to spend $5,500,000 for new equipment which is to include 14 Diesel-electric freight locomotives and three modern trains of five cars each.

The ERIE has placed an order with the Electro-Motive division of the General Motors Corporation for seven of the newest type Diesel-electric passenger locomotives, with delivery stipulated for late this year. The locomotives will be of the three-unit type with a total of 4,500 hp., and with cabs at each end to eliminate the necessity for turning. When delivered the locomotives will operate between Jersey City, N. J., and Chicago on the Erie Limited and the Midlander, and between Jersey City and Marion, Ohio, on the Pacific Express and the Atlantic Express.

FREIGHT CARS

The WHEELING & LAKE ERIE is inquiring for 750 50-ton gondola cars.

The ANN ARBOR is inquiring for 50 50-ton box cars.

PASSENGER CARS

The PENNSYLVANIA'S order for 70 passenger cars placed with the Edward G. Budd Manufacturing Company comprises 50 sleepers, each with 21 private rooms for single occupancy; six kitchen-dormitory cars; three twin-unit diners (totaling six cars); six regular diners, each with a capacity of 48 passengers and kitchen; and two coach-lounge cars. The 70 cars will cost in excess of $7,000,000. Deliveries will begin in the last quarter of this year. As reported in the *Railway Age* of January 26, page 255, the 70-car order to Budd is part of a group of 214 cars purchased by the Pennsylvania at a cost of $21,000,000. The Pullman-Standard Car Manufacturing Company was allocated 87 of the cars and the American Car & Foundry Co. 57. The cars will be used by the Pennsylvania on its "Blue Ribbon" lines. The company previously had ordered 112 coaches, which are now under construction.

SIGNALING

The BALTIMORE & OHIO has ordered a 6-lever table interlocker from the General Railway Signal Company for the control of a Model 5D dual-control switch machine, traffic locking, and three signals at Powell, W. Va.

The NEW YORK CENTRAL has ordered a 14-lever table interlocker from the General Railway Signal Company to control 12 switch machines, two derails, a switch lock, and 11 signals at an interlocking at Marcy, Ohio. The order includes plug-coupled Type K relays, Types G and F signals, Model 7 switch circuit controllers, and Model 5C switch machines.

The MISSOURI PACIFIC has ordered train communication equipment from the General Railway Signal Company for 15 locomotives, 15 cabooses, and 7 wayside stations. Communication will be by radio between locomotives and cabooses, and by inductive carrier between cabooses and wayside stations. This train communication will be installed between McGehee, Ark., and Alexandria, La., 193 miles.

The BANGOR & AROOSTOOK has contracted with the General Railway Signal Company for labor and materials to install absolute permissive block signaling on 17 miles of single track between Millinocket, Me., and West Seboois, and station protection signaling at Millinocket. Type SC searchlight signals, Type K relays, Model 9A switch locks, Model 9 switch indicators, and Model 7 switch circuit controllers will be used in this installation.

The GULF, MOBILE & OHIO has ordered materials from the General Railway Signal Company to install coded track circuits on the 17 miles of absolute permissive block signaling between Perry, Tenn., and Ruslor. The present Type D color-light signals will be replaced with Type SA searchlight signals, and 14 coded track circuits fed by rectified a-c. will replace the former conventional a-c. track circuits. Conventional a-c. track circuits will be used through sidings. This installation will utilize Type B plug-in relays and factory-wired housings.

The NORTHERN PACIFIC has ordered Type K, two-wire centralized traffic control equipment from the General Railway Signal Company to equip the 51 miles of single track between Helena, Mont., and Garrison. An 88-in. control panel, to be located at Missoula, Mont., 66 miles west of Garrison, will be provided with a train recorder, 55 track indication lights, and 50 levers for the control of 22 Model 5D dual-control switch machines, four switch locks, and 72 signals. The longest individual control will be 117 miles. Equipment used will include Type-SA signals, Type-K relays, Model-9A switch locks, and welded steel bungalows equipped with telephone booths.

Supply Trade

A. C. Griffith has been appointed sales manager of the **Standard Brake Shoe & Foundry Co.**, with headquarters in the general offices at Pine Bluff, Ark.

Don G. Mitchell has been elected executive vice-president of **Sylvania Electric Products, Inc.** Mr. Mitchell joined Sylvania as vice-president in charge of sales in 1942.

Eugene T. Scott has been appointed product application engineer with headquarters in Chicago for **Templeton, Kenly & Co.**, Chicago. Mr. Scott has been serving in the navy since 1942.

The **Rust-Oleum Corporation,** Evanston, Ill., has appointed three new general agents to represent it in the railway supply field. The new appointments are C. E. Murphy, Cleveland, Ohio; W. W. Fetner, St. Louis, Mo., and the Frank B. Nugent Company, St. Paul, Minn.

Lachlan W. MacLean, New York sales office manager of the **Dampney Company of America,** has been appointed manager of the company's Boston, Mass., sales office.

William P. Turnesa has been appointed director of sales of **Pressurelube, Inc.** Mr. Turnesa recently was discharged from the navy. He formerly was vice-president of the Differential Wheel Corporation.

The **Maxim Silencer Company** of Hartford, Conn., has announced that it will handle all business in Vermont, New Hampshire, Maine, Massachusetts and Rhode Island direct from its main office in Hartford.

Wayne E. Lynch, a member of the Transportation division of the **General Electric Company** at Chicago, has been promoted to sales engineer of the division, with the same headquarters, succeeding **Carlos Dorticos,** who has retired after 42 years of service with the company.

The **Koppers Company,** Pittsburgh, Pa., has acquired the entire common stock of the **Wailes Dove-Hermiston Corporation,** of Westfield, N. J. The latter company will continue to operate as a separate organization with the same management.

H. G. Sharp, assistant general manager of the General Machinery Ordnance Corporation, has been appointed general manager of the **Graver Tank & Manufacturing Co.** of East Chicago, Ind. **William G. Shipman** has been appointed plant superintendent at East Chicago.

L. D. Yenawine has been appointed lubrication engineer in the railway sales division of the **Continental Oil Company** with headquarters in St. Louis, Mo. Mr. Yenawine formerly was employed with the Terminal R. R. Association of St. Louis, where he served as steam foreman and later as Diesel foreman.

Heywood-Wakefield's transportation seating division has announced that **J. C. Kettlesen,** of the **Gulf States Equipment Company,** will sell Heywood-Wakefield railroad and bus seats in the southwestern United States. The offices of the Gulf States Equipment Company are in Dallas, Texas.

The Leslie Co., Lyndhurst, N. J., has announced the appointment of the following agents to handle industrial sales and services: Walz & Krenzer, Inc., Rochester, N. Y.—mid-western New York; Gulf Engineering Company, Savannah, Ga.—southeastern Georgia; Robinson Electric Company, Ltd., Vancouver, B. C.—British Columbia, Canada.

Alfred C. Laessig, western representative of **Hubbard & Co.,** at Chicago, has been promoted to general manager, with headquarters at Pittsburgh, Pa. **N. A. Howell,** western sales representative

of the **Unit Rail Anchor Company,** an affiliate of Hubbard & Co., at Chicago, has been appointed also western representative of Hubbard, succeeding to the duties of Mr. Laessig.

W. A. Finn, who has been released from the Navy, has been appointed export manager of the **Worthington Pump & Machinery Corp.** to succeed **George Gellhorn,** who has been appointed general manager of C. E. Halaby, one of Worthington's industrial machinery dealers in Colombia, South America. Before the war, Mr. Finn was manager of Worthington's Boston, Mass., district office.

Walter M. English, formerly superintendent of motive power of the Chicago, Indianapolis & Louisville and for the past two years serving with the armed forces in Europe, has been elected executive vice-president of the **Hanna Stoker Company,** Cincinnati, Ohio. Mr. English is a graduate of Purdue University and began his career as a special apprentice of the Monon in 1914. He was later advanced to division master mechanic and for 11 years served as superintendent of motive power. In 1944 he was called to Washington, D. C., commissioned a colonel in the United States Army and sent to Paris, France, where he was appointed general superintendent of motive power in general headquarters of the Military Railway Service in the European theater. He returned to America in September of last year for discharge and three months later he was elected to his new position with the Hanna organization.

Walter M. English

The **Ashton Valve Company** has acquired the Valve division of the **Lombard Governor Corporation** of Ashland, Mass. This line of valves will be manufactured at the Ashton main plant in Cambridge, Mass. **John F. String,** formerly valve sales manager of the Lombard Governor Corporation and of the Everlasting Valve Company, has joined the Ashton Valve Company.

James J. Keliher, assistant to the president and chief service engineer of the **Paxton-Mitchell Company** of Omaha, Neb., has retired. **James C. Peugh** has been appointed sales and service engineer to cover the western part of the United States, the territory formerly handled by Mr. Keliher. Mr. Peugh once was connected with the Missouri Pacific. He has been serving in the army for the past thirty-nine months.

As reported in the *Railway Age* of January 26, **Samuel M. Felton,** for the past nine years general sales manager of the railway division of the Edward G. Budd Manufacturing Company, was elected full-time president of the **American Railway Car Institute** at its annual meeting in New York on January 17. This formerly was an honorary position held by the presidents of various car building companies. The organization, nationwide in its membership, includes the leading builders of both passenger and freight cars. Mr. Felton was graduated from Harvard University in 1916. He was a major in the engineering corps in the first world war, serving as executive officer to the chief engineer of the American Expeditionary Forces. He was decorated both by the United States and France. Both his father and grandfather were railroad presidents, the former successively the head of the Alton and the Great Western. In his capacity as general sales manager for the Budd Company, he directed the sale of such modern trains as the Empire State Expresses, the Champions, the Silver Meteors, the South Winds, and the Dixie Flaglers.

Samuel M. Felton

Huston Brown, vice-president, has been elected president of the **Joyce-Cridland Company,** of Dayton, Ohio, to succeed **J. M. Switzer,** who becomes chairman of the board. **Kert Hott,** chief engineer, has been elected vice-president and secretary, and **Warren Webster,** secretary, has been elected vice-president and treasurer. **Merle P. Smith,** who recently returned from service in the Army with the rank of lieutenant colonel, has been appointed general manager. Mr. Brown will continue as director of sales.

District representatives in New England, New York, Pennsylvania, West Virginia and Ohio territories have been appointed to handle Malabar specialized lifting equipment for railroads. Malabar is a product division of the **Menasco Manufacturing Company.** The appointments are the **Walton R. Collins Company** of New York to cover the New York area; **E. Loyd Ettenger,** Washington, D. C., for the middle Atlantic territory; and **W. J. Church,** New Orleans, La., for the Western Texas and Louisiana territories.

Weber de Vore, who throughout the war years was manager of the ordnance division of the **Heintz Manufacturing Company,** Philadelphia, Pa., has been appointed to head that company's newly-organized marine, railroad and export division. **Evan J. McCorkle** has been appointed assistant to Mr. de Vore. **Paul R. Higginbotham,** formerly in charge of Navy sales work at Heintz, has been transferred to the company's refrigeration and air conditioning division.

The **American Brake Shoe Company** has purchased **Joliette Steel, Ltd.,** producer of manganese and alloy steel castings in Canada. The company will be operated by the present management, working under the direction of Brake Shoe's American Manganese Steel division. **Joseph B. Terbell** will head the company and **J. L. Mullin** will be a vice-president. An expansion and mechanization program has been planned for Joliette Steel under which production will be increased and a wider range of alloy steel products produced.

James F. Olsen, formerly sales manager of the Turbo-Mixer Corporation, a unit of the **General American Transportation Corporation,** has been transferred to the Chicago office of General American Process Equipment as manager of sales. **James A. Lane,** formerly stationed at the Chicago office of General American Process Equipment, has been transferred to the New York office as assistant to the sales manager of General American Process Equipment.

Bert R. Prall, former vice-president and general manager of operations and a member of the board of Montgomery Ward & Co., Chicago, has been elected executive vice-president of the **Dayton Rubber Manufacturing Company.** Mr. Prall was associated with Montgomery Ward for the past 26 years. The office of chairman of the board of Dayton Rubber was left vacant, and will continue to be combined with the office of Mr. Freedlander, president, who is chief executive officer and general manager of the company.

Fred C. Walter, who has been associated with the sales, advertising and product development department of the **Formica Insulation Company** for 17 years, has been promoted to assistant sales manager. **Albert Lesberil** has been appointed manager of a direct factory branch office opened by the company in Philadelphia, Pa. The Philadelphia territory formerly had been operated under Mr. Lesberil as a branch of the New York office. The company's Atlanta, Ga., and Charlotte, N. C., territories have been combined with offices in both cities. **Clarence Kuester,** who has been associated with his brother, Fason Kuester, in charge of the Charlotte office, has been transferred to Atlanta in charge of the sales work in the Georgia area. **Kenneth Pitt,** until recently in the Formica home office and plant purchasing department, has been transferred to Boston, Mass.

Financial

BALTIMORE & OHIO.—*Promissory Notes.*—Division 4 of the Interstate Commerce Commission has authorized this company to issue $1,200,000 of series J promissory notes in evidence, but not in payment, of the unpaid portion of the purchase price of 500 50-ton hopper cars acquired under a conditional sale agreement from the Ralston Steel Car Company at $2,778 each. The issue has been sold to the Irving Trust Company on a 1.5 per cent annual interest basis.

MONTOUR.—*Promissory Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue $400,000 of promissory notes, bearing 1½ per cent interest annually, in connection with the purchase from the Pullman-Standard Car Manufacturing Company of 200 50-ton hopper cars at a total cost of $545,000.

SOUTHERN PACIFIC.—*Refunding.*—The Southern Pacific Railroad has applied to the Interstate Commerce Commission for permission to issue $50,000,000 of series E first mortgage bonds due in 1986, to be guaranteed by the Southern Pacific Company. The proceeds, together with other funds to be advanced by the Southern Pacific Company to the railroad, are to be employed in the redemption of an equal principal amount of the series B 3¾ per cent first mortgage bonds due in 1986 and presently outstanding.

Average Prices Stocks and Bonds

	Jan. 29	Last week	Last year
Average price of 20 representative railway stocks..	66.72	65.16	47.19
Average price of 20 representative railway bonds..	93.54	102.28	102.97

Dividends Declared

Dallas Railway & Terminal Company.—7% preferred, $1.75, quarterly, payable February 1 to holders of record January 21.

Erie & Kalamazoo.—$1.50, semi-annually, payable February 1, to holders of record January 26.

International Rys. of Central America.—5% preferred (accum.), $1.25, payable February 15 to holders of record February 5.

Michigan Central.—$25, semi-annually, payable January 31 to holders of record January 18.

Norfolk & Western.—$2.50, quarterly; and $3.00, extra, both payable March 9 to holders of record February 13.

Reading.—4% 1st preferred, 50¢, quarterly, payable March 14 to holders of record February 21.

Southern.—Common, 75¢, quarterly, payable March 15 to holders of record February 15; 5% preferred, $1.25, payable in quarterly installments: March 15, June 15, and September 16 to holders of record February 15, May 15, and August 15, respectively.

Abandonments

ERIE.—This company has applied to the Interstate Commerce Commission for authority to abandon a portion of a branch from a point near Blossburg, Pa., to Hoytville, 13.2 miles.

MISSOURI-KANSAS-TEXAS.—Division 4 of the Interstate Commerce Commission, on petition of several unions, has extended for a further period of two years its reservation of jurisdiction with respect to the protection of employees who may be affected by the line abandonment by the Texas Central from DeLeon, Tex., to Cross Plains, authorized by the division in January, 1944.

UNION PACIFIC.—Division 4 of the Interstate Commerce Commission has authorized this company to abandon a branch from Ripple, Colo., to Orcutt, 2.35 miles, over which no traffic was moved in 1945.

Construction

DENVER & RIO GRANDE WESTERN.—This road has awarded a contract, amounting to $31,985, to the Mine & Smelter Supply Co., for the installation of dry sand-handling facilities at Helper, Utah, Minturn, Colo., and Grand Junction.

Railway Officers

EXECUTIVE

W. H. Guild, executive assistant of the Union Pacific at Los Angeles, Cal., has been elected vice-president, with headquarters at Omaha, Neb.

FINANCIAL, LEGAL AND ACCOUNTING

Arthur K. Marvin has been appointed land and tax agent for the New York, Susquehanna & Western with headquarters at Paterson, N. J., in place of **A. B. Johnson,** whose headquarters have been at Cleveland, Ohio.

Arthur O. Appel, whose promotion to assistant secretary and treasurer of the Atchison, Topeka & Santa Fe, with headquarters at Los Angeles, Cal., was reported in the *Railway Age* of January 12,

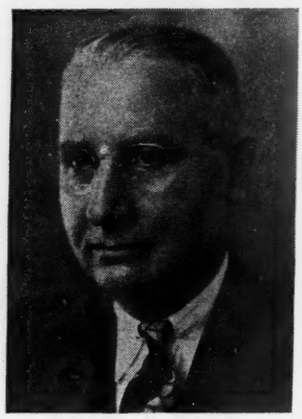
Arthur O. Appel

was born at St. Louis, Mo., on November 11, 1890, entered railroad service in 1908 as an office boy in the treasury department of the Santa Fe at Los Angeles, and served as bookkeeper until 1915, when he was promoted to cashier. In 1923 Mr. Appel was advanced to deputy assistant treasurer, the position he held at the time of his recent promotion.

William M. Mooney, comptroller of the Tennessee Central, with headquarters at Nashville, Tenn., has retired after more than 50 years of railroad service.

A. D. Daniel, auditor for the Atlanta, Birmingham & Coast, with headquarters at Atlanta, Ga., has been appointed assistant to comptroller of the Atlantic Coast Line at Atlanta.

V. A. Hewitt, whose promotion to treasurer of the Chicago, Indianapolis & Louisville, with headquarters at Chicago, was reported in the *Railway Age* of January 26, was born at Rensselaer, Ind., on September 2, 1895, and entered railway service in April, 1914, as a stenographer of the C. I. & L. at Lafayette, Ind. In 1916 he was promoted to secretary to the general superintendent at Chicago, resigning in 1918 to take employment with a legal firm in Chicago. On August of that year he returned to the C. I. & L. as secretary to the president, with headquarters at Chicago, and in 1920 he was appointed chief clerk of the president and the trustees.



V. A. Hewitt

On April 1, 1939, Mr. Hewitt was promoted to executive chief clerk, and in November, 1940, he was further advanced to office manager, executive department, with the same headquarters. In July, 1944, he was appointed assistant to the chief executive officer, the position he held at the time of his recent promotion.

The firm of **Osborn, Copp & Markham,** assistant division counsel for the Southern and the Georgia, Southern & Florida, has been appointed division counsel in the state of Florida for these lines. The firm's offices are at Jacksonville, Fla. The firm of **Hall & Bloch,** with offices at Macon, Ga., has been appointed division counsel of Georgia for the Southern & Florida, in the vacancy caused by the death of **J. E. Hall, Sr.**

John I. Barnes, whose promotion to assistant comptroller of the Baltimore & Ohio, was announced in the January 12 issue of *Railway Age,* began his career with the Baltimore and Ohio as a stenographer in the office of division accountant at Cumberland, Md., in 1918. He was

News Department continued on next left-hand page

Only because the railroads are able to move heavier trains on faster schedules than ever before, are they able to handle today's traffic.

For both freight and passenger service, this requires the use of modern locomotives, designed for economical operation on long runs, as is this Lima-built 4-8-2 of the New York Central Lines.

LIMA LOCOMOTIVE WORKS LIMA LOCOMOTIVE WORKS INCORPORATED **INCORPORATED, LIMA, OHIO**

transferred to Baltimore, Md., in the office of assistant auditor of disbursements in 1920, and then to the comptroller's office there in 1921. Mr. Barnes became secretary to vice-president and comptroller in 1936, and in 1941 was appointed chief clerk

John I. Barnes

in the same office at Baltimore. He was promoted to assistant to comptroller in 1943, and maintained this post until his advancement became effective on January 1. His headquarters remain as before in Baltimore.

Robert E. Gilmor, whose retirement as land and tax agent of the Union Pacific, with headquarters at Omaha, Neb., was reported in the *Railway Age* of January 26, was born near Vandalia, Mo., on December 25, 1882, received his higher education at University of Missouri, and entered railroad service in January, 1907, with the Union Pacific. In 1910 he resigned to engage in private business. Mr. Gilmor re-entered the service of the Union Pacific on January 16, 1919, since which date he has been employed in the land and tax department.

C. L. Taylor, auditor for the Piedmont & Northern and the Durham & Southern, has been appointed general auditor, with headquarters as before at Charlotte, N. C., succeeding **E. B. Hardin,** whose death is reported elsewhere in these columns. **R. L. Holder** has been appointed auditor of disbursements at Charlotte, and **D. J. Caldwell,** freight claim agent there, has been named auditor of receipts. In addition to freight and passenger accounting matters usually handled under the title of auditor of receipts, Mr. Caldwell will also have charge of loss and damage claims, overcharge claims, and car records.

The office of auditor and the office of freight claim agent-assistant auditor of the Piedmont & Northern and the Durham & Southern at Charlotte have been abolished.

OPERATING

W. F. Davis has been appointed assistant to assistant general manager of the New York Central with headquarters at Cleveland, Ohio.

A. C. Fletcher, sleeping and dining car agent of the Canadian National at Montreal, Que., has been advanced to assistant superintendent of sleeping and dining cars, with headquarters at Moncton, N. B.

C. H. Sauls, assistant general manager of the Seaboard Air Line at Savannah, Ga., has been advanced to general superintendent, Norfolk, Va., and the position of assistant general manager at Savannah has been abolished. **J. W. Smith,** assistant chief engineer at Norfolk, Va., has been named assistant general superintendent at Savannah. **J. M. Broetzman,** assistant superintendent, has been promoted to terminal superintendent, with headquarters as before at Hamlet, N. C.

A. W. Colnot, whose promotion to superintendent of the Chicago division of the Baltimore & Ohio, with headquarters at Garrett, Ind., was reported in the *Railway Age* of January 12, was born at New Castle, Pa., on February 24, 1901, entered railroad service on July 11, 1917, as a yard clerk on the Baltimore & Ohio at New Castle, and was promoted to yardmaster in 1920. In September, 1929, he became night general yardmaster at Youngstown, Ohio, and in October, 1935,

A. W. Colnot

day general yardmaster. Mr. Colnot was appointed assistant trainmaster at Akron, Ohio, on December 20, 1937, advanced to trainmaster at Newark, Ohio, on March 20, 1939, and transferred to Akron on March 1, 1943. On January 1, 1945, he was appointed to assistant superintendent at Pittsburgh, Pa., the position he held at the time of his recent promotion.

W. A. McDonald, superintendent, sleeping and dining car department, of the Canadian National at Toronto, Ont., has been promoted to general superintendent at Winnipeg, Man., with jurisdiction over sleeping and dining car services of the Western region. **C. A. Wilson,** assistant superintendent at Toronto, succeeds Mr. McDonald as superintendent there. **C. H. Worby,** superintendent, sleeping and dining car services, at Winnipeg, has retired after more than 17 years in that capacity, and the position of superintendent at Winnipeg has been abolished.

J. J. O'Toole, whose promotion to superintendent of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Minneapolis, Minn., was reported in the *Railway Age* of January 19, was born at Chicago on September 28, 1897, received his higher education at DePaul University in that city, entered railroad service on November 13, 1912, as a switchmaster on the Milwaukee, and has spent his entire railroad career with that road. He served as switchman from June, 1914 to March, 1916, and in various clerical positions from

J. J. O'Toole

1916 to 1925, when he became assistant chief clerk to the general manager. From July to December 1, 1936, he was outside representative, and on the latter date was promoted to trainmaster at Minneapolis. Mr. O'Toole was advanced to assistant superintendent in September, 1938, with headquarters at Wausau, Wis., and on December 1, 1939, he was transferred to Milwaukee, Wis., the position he held at the time of his recent promotion.

H. H. Pevler, whose promotion to general manager—Western region, of the Pennsylvania, with headquarters at Chicago, was reported in the *Railway Age* of January 26, was born on April 20, 1903, at Waynetown, Ind., and was graduated from Purdue University in 1927, with the degree of bachelor of science in civil engineering. He entered railroad service with the Pennsylvania on May 4, 1927, as assistant on engineering corps, Philadelphia Terminal division, and was appointed assistant supervisor, Atlantic division, on

H. H. Pevler

November 1, 1927, being transferred to the Middle division on September 8, 1928. Mr. Pevler then served as supervisor of track on the Baltimore, Atlantic, Philadelphia and Baltimore divisions, successively. From May 1 to October 1, 1935, he was division engineer of the St. Louis division,

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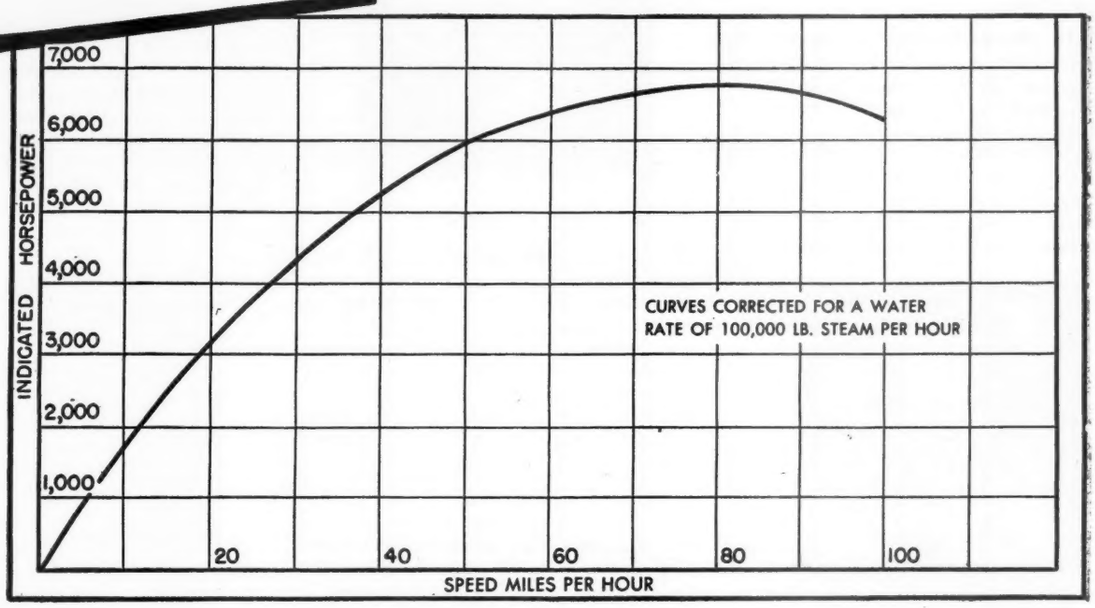
6552 INDICATED HORSEPOWER

The Franklin System of Steam Distribution

applied to

The Pennsylvania Railroad's T-1 Locomotives

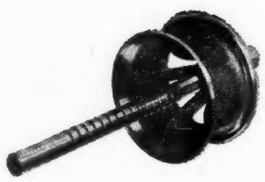


50 T-1s NOW GOING INTO SERVICE

Ralph P. Johnson, Chief Engineer of the Baldwin Locomotive Works says:

"The maximum indicated horsepower of the T-1 locomotive is 40 percent higher than that of any locomotive previously tested at Altoona. The graph shows the maximum indicated horsepower of the T-1 locomotive at various speeds, based on a steam supply of 100,000 pounds per hour."

--From paper read before the New York Railroad Club on May 17, 1945.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO • MONTREAL

being transferred to the Fort Wayne division on October 1, 1935, and to the Pittsburgh division on May 1, 1936. He became division engineer in the office of the chief electrical engineer on August 1, 1937, and was transferred to the office of the chief engineer at Philadelphia on July 16, 1938. Mr. Pevler was promoted to superintendent of the Logansport (Ind.) division on April 1, 1939, and became superintendent freight transportation at Philadelphia in April, 1940. On January 16, 1942, he was promoted to superintendent of the Philadelphia Terminal division, and one month later he was advanced to general superintendent of the Eastern Pennsylvania division at Harrisburg, Pa., the position he held at the time of his recent promotion.

R. D. Fretwell, whose appointment to superintendent of the Northern division of the Kansas City Southern, with headquarters at Pittsburg, Kan., was reported in the *Railway Age* of January 12, was born at Pittsburg, on January 5, 1898, entered railroad service in December, 1914, as a telegraph operator on the Kansas City Southern, and served as terminal agent, chief dispatcher's clerk, and train dispatcher un-

R. D. Fretwell

til 1917, when he became chief train dispatcher at Heavener, Okla. During World War I he served with the armed forces from 1918 to 1919, returning in the latter year to his former position, in which he served until 1931, when he was transferred to Pittsburg. Mr. Fretwell went on active service with the armed forces in June, 1943, with a railroad division, and rose to the rank of full colonel before he returned to the road as superintendent.

John Edwards, Jr., whose appointment as assistant general superintendent of transportation of the Baltimore & Ohio, with headquarters at Baltimore, Md., was announced in the *Railway Age* of January 12, was born at Mason City, W. Va., on December 4, 1889. He was graduated from the Catholic University of America (B. S., 1912) and entered railway service as a timekeeper for the B. & O. in 1911, becoming a rodman in 1912. During 1914 and 1915, Mr. Edwards was a surveyor for the United States Forest Service, returning to the B. & O. in 1916 as a transitman, and advancing to assistant supervisor and assistant division engineer at Philadelphia in 1917. He served in the engineering corps, American Expeditionary Forces, during World War I. Returning as a captain in 1919, Mr. Edwards rejoined the B. & O. as assistant division engineer, with headquarters at Cumberland, Md., and Keyser, W. Va. He was advanced to assistant engineer maintenance of way

John Edwards, Jr.

and structures, Pittsburgh, Pa., in 1927, and division engineer, Monongah division, at Grafton, W. Va., in 1929. He was promoted to assistant superinttndent, Baltimore division, in 1939; superintendent, Monongah division, in 1937; superintendent, Cumberland division, in 1941; and superintendent, Akron division, in 1942, maintaining this post until his recent advancement.

James T. McCorkle, whose promotion to general superintendent of the Milwaukee-Kansas City Southern joint agency at Kansas City, Mo., was reported in the *Railway Age* of January 12, was born at Little Rock, Ark., on September 5, 1888, and entered railway service in June, 1905, as a machinist apprentice of the Southern at Atlanta, Ga. In 1907 he went with the Louisville & Nashville, working as a brakeman and conductor at Etowah, Tenn. He later served in similar capacities with

James T. McCorkle

the Atchison, Topeka & Santa Fe, and the Union Pacific. In 1919 Mr. McCorkle became a switchman of the Missouri-Kansas-Texas, with headquarters at Kansas City, Kan., and one year later he went with the Kansas City Southern, subsequently serving as yardmaster, assistant general yardmaster, general yardmaster, assistant superintendent of terminals and superintendent of terminals at Kansas City. On June 1, 1944 he was promoted to general superintendent of transportation of the Kansas City Southern and the Louisiana & Arkansas, with headquarters at Shreveport, La., the position he held at the time of his recent promotion.

F. K. Emmanuel, former trainmaster for the New York Central at Indianapolis, Ind., has recently returned from 3 years' service as colonel in command of the 721st Railway Operating Battalion, C. B. I. theatre, and has been appointed assistant to assistant general manager with headquarters at Indianapolis.

Frank I. Umhau, whose appointment as superintendent car service of the Southern at Atlanta, Ga., was announced in the January 5 issue of *Railway Age,* was born on November 5, 1900, at Washington, D. C. He entered his railway career in 1916 as a clerk in the Southern's car service department at Washington. After serving in various clerical positions in that department, he was advanced to chief clerk of

Frank I. Umhau

reclaims with headquarters at Atlanta in September, 1929. Mr. Umhau was appointed assistant superintendent car service at Atlanta in February, 1944, and maintained this post until the time of his recent promotion.

F. A. Burroughs, assistant superintendent of the Southern at Sheffeld, Ala., has been promoted to superintendent of the Mobile division, with headquarters at Selma, Ala., where he succeeds **W. H. Oglesby,** who has been transferred to Hattiesburg, Miss., to replace **O. B. Keister, Jr.,** who in turn succeeds **D. W. Brosnan,** whose promotion to chief engineer, maintenance of way and structures, is reported elsewhere in these columns. **R. J. Stone** has been appointed assistant superintendent at Sheffield, Ala., succeeding Mr. Burroughs.

J. B. Singleton, assistant trainmaster of the Southern at Birmingham, Ala., has been promoted to trainmaster, with headquarters at Selma, Ala., succeeding **L. I. McNutt,** who has been transferred to Louisville, Ky., where he replaces **J. P. Mumford,** who in turn has been trans-

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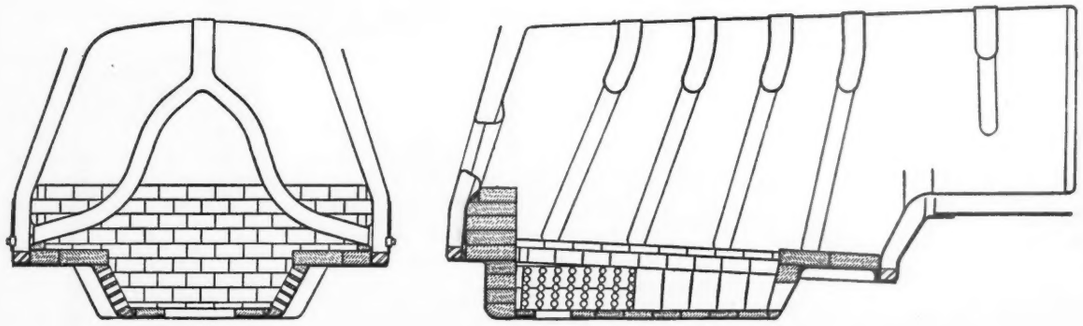

A type of Security Circulator for oil-burning locomotives that provides efficient heating surface with unimpeded circulation

Six Years of Service

in oil-burning locomotives

Since the first installations of Security Circulators in oil-burning locomotives were made in 1939, their value for improving boiler performance has been conclusively demonstrated.

In such installations the intakes of the Circulators are placed as near the mud-ring as possible to improve boiler water circulation, which aids in minimizing firebox troubles.

AMERICAN ARCH COMPANY, INC.

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SECURITY CIRCULATOR DIVISION

ferred to the Alabama Great Southern at Birmingham, to replace **E. R. Oliver, Jr.**, who becomes trainmaster on the Birmingham division, with the same headquarters, succeeding **R. J. Stone**, whose promotion to assistant superintendent at Sheffield, Ala., is reported elsewhere in these columns.

A. E. Yarlott, superintendent of dining service of the Boston & Albany at Boston, Mass., has been appointed general superintendent of dining service of the New York Central, with headquarters at New York. Mr. Yarlott will receive, until further notice, all correspondence and reports heretofore addressed to **B. J. Bohlender**, manager dining service, who has been granted a leave of absence. The jurisdiction of **G. H. Baker**, general superintendent passenger transportation at New York, has been extended to include the supervision of dining service.

J. C. Jones, whose promotion to general superintendent of the Alberta district of the Canadian Pacific, with headquarters at Calgary, Alta., was reported in the *Railway Age* of January 12, was born at Windsor, Ont., on January 9, 1893, and entered railway service in 1912 as a rodman of the Canadian Pacific at Moose Jaw, Sask. He later served as a brakeman, with the same headquarters, and in 1915 he was granted a leave of absence to join the Canadian armed forces. On April 1, 1920, Mr. Jones returned to the Canadian Pacific as a clerk of the superintendent's office at Regina, Sask., subsequently serving at that point successively as transitman, clerk of the maintenance of way department and acting division engineer. In 1925 and 1926 he served as relief roadmaster of the Moose Jaw, Yorkton and Saskatoon division, and in the latter year he was advanced to roadmaster of the Cutknife subdivision of the Saskatoon district, later serving in that capacity at various other points of the road. On July 1, 1938, Mr. Jones was promoted to assistant superintendent of the Saskatoon division, with

J. C. Jones

headquarters at Wyngard, Sask., and on October 10, 1941, he was transferred to Prince Albert, Sask. On May 1, 1944, he was advanced to superintendent of the Edmonton division, with headquarters at Edmonton, Alta., and transferred to the Moose Jaw division on April 1, 1945, the position he held at the time of his recent promotion.

John E. Fitzpatrick, special representative of the superintendent telegraph of the Union Pacific, has been promoted to assistant superintendent of telegraph, with headquarters as before at Omaha, Neb.

TRAFFIC

M. F. Friedkin has been appointed foreign freight agent of the Missouri Pacific, with headquarters at Chicago.

E. M. Potticary, assistant general freight agent of the Pere Marquette at Detroit, Mich., has retired.

F. E. Deines, whose promotion to assistant freight traffic manager of the Chicago, Burlington & Quincy, with headquarters at Chicago, was reported in the *Railway Age* of December 29, was born at Harvard, Neb., on November 1, 1911, entered railroad service on January 4, 1928, with the Burlington at Omaha, Neb., and served in various clerical positions until February 1, 1937, when he became chief clerk to the general agent at Minneapolis, Minn. On September 1, 1937, he was

F. E. Deines

promoted to city freight agent at the same place, and served in that capacity until March 30, 1938, when he was appointed traveling freight agent at Lincoln, Neb. From July 1, 1940, to February 28, 1941, Mr. Deines was grain agent at Omaha, being promoted on the latter date to division freight agent at Burlington, Iowa. On April 1, 1943, he was further advanced to assistant general freight agent at St. Louis, Mo., the position he held at the time of his recent promotion.

Robert E. Barr, whose promotion to general freight agent of the Chicago, Burlington & Quincy, with headquarters at Chicago, was reported in the *Railway Age* of December 29, was born at Omaha, Neb., on July 24, 1908, received his higher education at the University of Omaha, entered railroad service on June 1, 1925, as a mail clerk on the Burlington at Omaha, and served in various minor positions until August 31, 1937, when he was appointed chief clerk to the general agent at Minneapolis, Minn. From April 1, 1938, to March 31, 1939, he was city freight agent at Minneapolis, and from April 1, 1939, to February 28, 1941, he served as tariff clerk at Omaha. Mr. Barr was appointed grain agent at Omaha on March 1, 1941, and served in that capacity until December 15, 1942, at which time he became chief clerk to the assistant general freight

Robert E. Barr

traffic manager at Chicago. On June 1, 1945, he was advanced to general agent, freight department, with headquarters at Minneapolis, the position he held at the time of his recent promotion.

Frank O'Kane, whose promotion to assistant freight traffic manager of the Chicago, Rock Island & Pacific, with headquarters at Fort Worth, Tex., was reported in the *Railway Age* of January 12, was born at Alda, Neb., on January 18, 1891, entered railroad service in the general passenger department of the Atchison, Topeka & Santa Fe on April 1, 1910, and served in various minor capacities until August, 1917, when he enlisted in the armed forces. He returned to railroad service in January, 1922, as general agent of the New Mexico Central at Santa Fe, N. M. From August, 1923, to February, 1928, he was commercial agent at Fort Worth, Tex., for the Trinity & Brazos Valley (now the Burlington-Rock Island). After a short period as soliciting freight agent of the Missouri-Kansas-Texas

Frank O'Kane

at Dallas, Tex., Mr. O'Kane returned to the Trinity & Brazos Valley in September, 1929, as traveling freight agent at Fort Worth, served in that capacity until May, 1931, when he became commercial and local freight agent for the Burlington-Rock

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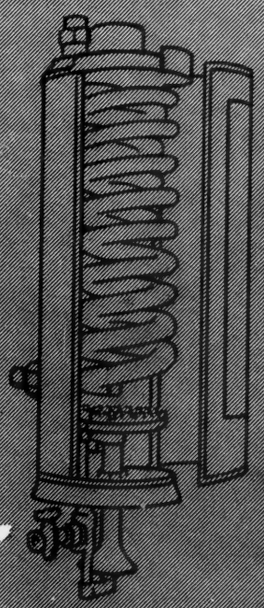
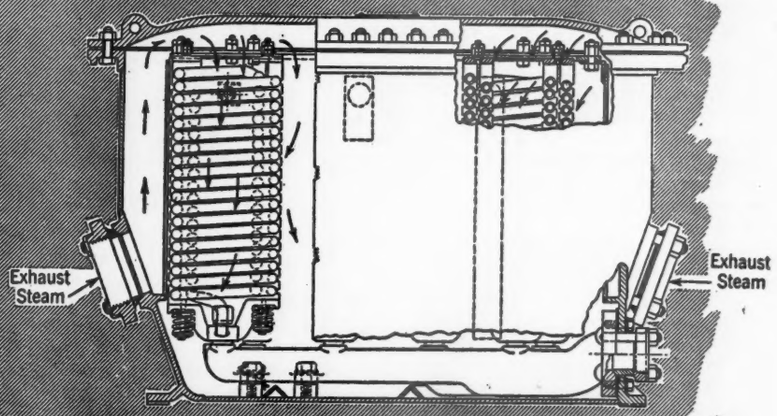
Coils..





Elesco Feedwater Heaters

when used in the design of a feedwater heater that provides for *free movement* of coils . . . have proved by experience to be the solution for freeing the heat exchange surfaces of scale.

Elesco "coil type" feedwater heaters have demonstrated this feature. They have delivered feedwater to the boiler at temperatures in close proximity to the temperature of the exhaust steam in the heater body . . . and they have done it from shopping to shopping without servicing.

The closed system is, of course, the simplest and requires the least maintenance. Many in service are daily proving this statement.

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Superheaters • Superheater Pyrometers • Exhaust Steam Injectors • Steam Dryers • Feed Water Heaters • American Throttles

Island at Galveston, Tex., being promoted to general agent of the same road at Houston, Tex., in January, 1934. In February, 1940, he became general agent of the Rock Island at Houston, and, in July, 1942, general freight agent at Fort Worth, the position he held at the time of his recent promotion.

A. C. Barfield has been appointed assistant to traffic manager of the Macon, Dublin & Savannah with headquarters at Macon, Ga.

R. P. Paterson, freight traffic manager of the Pere Marquette at Detroit, Mich., has retired after more than 55 years of service.

J. Arthur Lajoie, customs agent for the Canadian Pacific at Montreal, Que., has been appointed general customs agent there.

E. B. Herrington, whose promotion to general freight agent of the Missouri Pacific, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of January 12, was born in Hardin County, Tex., on September 27, 1890, received his higher education at Texas Baptist College, enter-

E. B. Herrington

ed railroad service in October, 1908, with the Texas & New Orleans at Jacksonville, Fla., and served in various minor positions on that road and various other roads until February, 1928, when he entered the service of the Missouri Pacific as a clerk in the traffic department at Houston, Tex., whence he was transferred to St. Louis in July, 1932. Mr. Herrington served as chief clerk to the freight traffic manager at St. Louis from April, 1934, to January, 1942, when he was advanced to assistant general freight agent, the position he held at the time of his recent promotion.

F. W. Curd, district passenger agent for the Chesapeake & Ohio with headquarters at Norfolk, Va., and **J. C. West,** passenger service agent at Richmond, Va., have retired.

H. E. Sehler, recently returned from active military service, has been appointed assistant general Eastern agent of the Nashville, Chattanooga & St. Louis with headquarters at New York. **C. W. Johnson,** honorably discharged from the United States Armed Forces, has been appointed freight traffic agent at Augusta, Ga.

Charles W. Hart has been named freight traffic agent at Macon, Ga.

E. A. Bohmeyer, whose promotion to passenger traffic manager of the Missouri-Kansas-Texas, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of January 12, was born at St. Louis on October 31, 1905, and entered railway

E. A. Bohmeyer

service on May 3, 1920, as a stenographer of the general passenger department of the M-K-T, subsequently serving as secretary of the general passenger agent, rate clerk and station passenger agent at St. Louis. In September, 1931, Mr. Bohmeyer was promoted to traveling passenger agent, with headquarters at Kansas City, Mo., and one year later he was advanced to city passenger agent, with headquarters at New York. On December 1, 1934, he was promoted to division passenger agent at St. Louis, and served in that capacity until January 1, 1944, when he was advanced to assistant passenger traffic manager, with the same headquarters, the position he held at the time of his recent promotion.

James F. Wallace, Jr., has been appointed district traffic agent of the New York, New Haven & Hartford, with headquarters at St. Louis, Mo., a newly-created position.

R. M. Hutchison, general agent of the Missouri Pacific at Havana, Cuba, has been appointed foreign freight agent at New York. **Charles F. Dooley** succeeds Mr. Hutchison as general agent at Havana.

William Wallace has been appointed assistant general passenger agent, Lines West, of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Seattle, Wash.

Irving T. Sorge, special assistant to the Atlantic Coast Director of the War Shipping Administration at Boston, Mass., has joined the New York, New Haven & Hartford as foreign traffic manager at Boston.

J. H. Lipscomb, whose retirement as general freight agent of the Burlington Lines, with headquarters at Denver, Colo., was reported in the *Railway Age* of January 19, was born at Beans Creek, Tenn., on November 5, 1880, entered railroad service in 1911 as city freight agent of the Burlington Lines at Denver, and has spent his entire railroad career with that road. On April 1, 1933, Mr. Lipscomb was promoted to general agent at Denver, and on January 1, 1941, he was advanced to the position he held at the time of his retirement.

Edward N. Mayer, general agent for the Boston & Maine at Detroit, Mich., has been appointed general freight agent at Boston, Mass., succeeding the late **Harrison Brown,** whose death was reported in the October 27, 1945, issue of *Railway Age.*

Allen M. Nye, general agent, passenger department, of the New York Central, with headquarters at St. Paul, Minn., has retired. The St. Paul territory will now be under the jurisdiction of **F. J. Bambach,** general agent, passenger department. **W. S. Hammond** has been appointed district passenger agent at St. Paul.

F. F. Crabbe, whose promotion to general freight agent of the Chicago, Burlington & Quincy, with headquarters at St. Louis, Mo., was reported in the *Railway Age* of December 29, was born at Newark, N. J., on September 12, 1896, received his

F. F. Crabbe

higher education at Amherst College, and entered railroad service as a clerk in the general freight agent's office of the New York, Ontario & Western at New York. On March 1, 1924, Mr. Crabbe entered the service of the Burlington Lines as a clerk in the office of the general freight agent at Ft. Worth, Tex. He was promoted to chief clerk at Denver, Colo., on July 1, 1927, and served in that capacity until January 1, 1931, when he became assistant general freight agent, also at Denver. On August 2, 1935, he was advanced to general agent at Washington, D. C., and on July 1, 1940, his title was changed to executive general agent, the position he held at the time of his recent promotion.

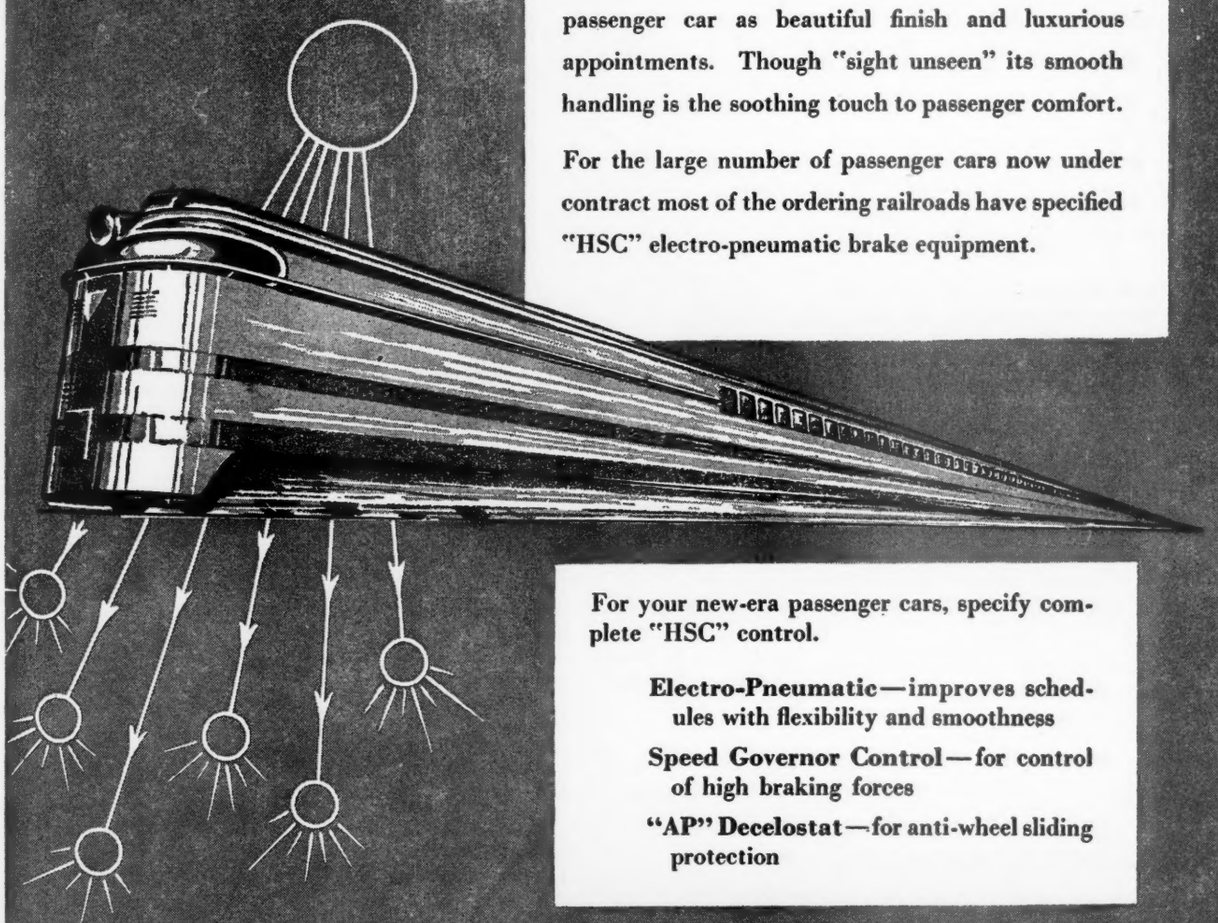
J. C. Harms, assistant freight traffic manager of the Pere Marquette at Detroit, Mich., has been promoted to freight traffic manager-rates, with the same headquarters. **E. L. Thrall,** general freight agent, has been advanced to assistant freight traffic manager-rates, with headquarters as before at Detroit. **W. P. Lee,** assistant general freight agent at Detroit, has been promoted to general freight agent—rates,

News Department continued on next left-hand page

How will Atomic Power affect "HSC" Brakes for Passenger Trains?

Your guess is as good as ours! But there is no guessing about the immediate future. The "HSC" electro-pneumatic brake is a development through a decade of actual operation. It has the necessary elements for safe and smooth operation of passenger trains. It is just as much a part of the modern passenger car as beautiful finish and luxurious appointments. Though "sight unseen" its smooth handling is the soothing touch to passenger comfort.

For the large number of passenger cars now under contract most of the ordering railroads have specified "HSC" electro-pneumatic brake equipment.



For your new-era passenger cars, specify complete "HSC" control.

Electro-Pneumatic—improves schedules with flexibility and smoothness

Speed Governor Control—for control of high braking forces

"AP" Decelostat—for anti-wheel sliding protection

Westinghouse Air Brake Company

Wilmerding, Pa.

with the same headquarters. **E. E. Sharps,** assistant general freight agent becomes general freight agent, solicitation, with headquarters as before at Detroit.

J. J. McGarry, whose promotion to general freight agent of the Burlington Lines, with headquarters at Denver, Colo., was reported in the *Railway Age* of Janu-

J. J. McGarry

ary 19, was born at Elmo, Kan., on July 7, 1910, entered railroad service in October, 1928, as a messenger on the Burlington Lines, and served in various minor positions until July, 1935, when he was appointed city freight agent at Denver. In March, 1936, Mr. McGarry was promoted to general agent at Salt Lake City, Utah, and transferred to Denver in May, 1943, in the same capacity, the position he held at the time of his recent promotion.

Col. J. A. Cunningham, formerly traffic development agent for the New York, New Haven & Hartford, has returned from military service and has been appointed manager of merchandise traffic, in charge of the newly-created department of merchandise traffic at Boston, Mass.

Francis X. Quinn, whose retirement on January 1 as general freight agent of the Pennsylvania at New York was announced in the *Railway Age* of January 19, was born in Brooklyn, N. Y., on September 9, 1876. Mr. Quinn entered railroading as a messenger for the Erie, subsequently becoming a clerk. He joined the Pennsylvania as freight representative at New York in 1897, later advancing to district freight representative. In 1917 he became division freight agent at Buffalo, N. Y., transferring to Pittsburgh, Pa., in 1921, and to New York in 1922. Mr. Quinn was promoted to general freight agent in 1927.

ENGINEERING & SIGNALING

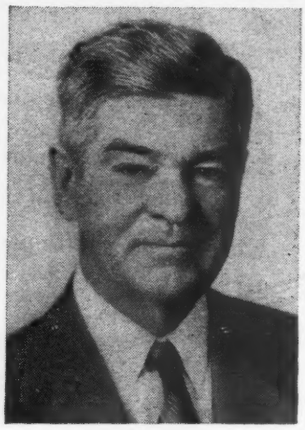
W. H. Goold, recently released from the armed forces, has returned to the New York Central as assistant engineer at Detroit, Mich.

C. H. Burks, division engineer, Carolina division, of the Seaboard Air Line, with headquarters at Savannah, Ga., has been advanced to assistant chief engineer at Norfolk, Va., succeeding **J. W. Smith,** whose promotion to assistant general superintendent at Savannah has been announced elsewhere in these columns. **W. R. Cox,** division engineer, South Florida division, at Tampa, Fla., succeeds Mr. Burks as division engineer at Savannah. **G. A. Calhoun,** assistant to the division engineer at Jacksonville, Fla., has been appointed division engineer at Tampa, succeeding Mr. Cox.

S. E. Tracy, recently released from the armed forces, has returned to the Chicago, Burlington & Quincy as superintendent of work equipment at Chicago.

R. F. P. Bowman, roadmaster on the Canadian Pacific, at Lethbridge, Alta., has been promoted to division engineer, at Brandon, Man., succeeding **D. J. Martin,** who has resigned to enter other business.

A. E. Botts, whose appointment as assistant chief engineer of the Chesapeake & Ohio at Richmond, Va., was announced in the January 19 issue of *Railway Age,* was born on July 15, 1882, at Bethel, Ky., and attended Kentucky University. He entered railroading in 1906 as a rodman for the Chesapeake & Ohio at Cincinnati, Ohio, transferring in 1907 to Ashland, Ky.,



A. E. Botts

where he was advanced to assistant engineer in 1908. He became assistant division engineer at Covington, Ky., in 1910, then division engineer at Ashland in 1911. From 1912 to 1914, Mr. Botts served as track supervisor, then was appointed division engineer at Huntington, W. Va. In April, 1929, he became general supervisor, buildings and bridges, with system jurisdiction at Richmond, and was advanced to assistant engineer maintenance of way there in June of that year. Mr. Botts maintained the latter post until his advancement to assistant chief engineer.

L. T. Nuckols, whose appointment as chief engineer of the Chesapeake & Ohio at Richmond, Va., was announced in the *Railway Age* of January 19, was born on December 12, 1890, near Rockville, Va. He entered railroading in 1907, working for the South & Western (now the Clinchfield), and subsequently joined the Louisville & Nashville, where he was engaged in location and construction work, advancing from chainman to assistant locating engineer. Following 18 months' service with the Bureau of Valuation of the Interstate Commerce Commission, Mr. Nuckols went with the Chesapeake & Ohio in 1916 as resident engineer, in which post he was connected with various heavy construction projects in West Virginia. In 1923, he was promoted to district engineer at Ashland, Ky., and in 1932, resident engineer

L. T. Nuckols

at Huntington, W. Va. He became assistant division engineer at Ashland in 1933, then division engineer there in 1936. He was promoted in 1939 to engineer of track, in 1941 to assistant chief engineer at Richmond, and in 1943 to engineer maintenance of way, which position he held until his recent advancement.

H. B. Christianson, formerly division engineer on the Chicago, Milwaukee, St. Paul & Pacific, at Savanna, Ill., who has returned from military service, has been appointed assistant to the chief engineer, with headquarters at Chicago.

Crosby Miller, whose retirement as chief engineer of the Chesapeake & Ohio at Richmond, Va., was announced in the *Railway Age* of January 19, was born on September 1, 1881, at San Francisco, Cal., and was graduated from the University of California (B. S. in civil engineering,

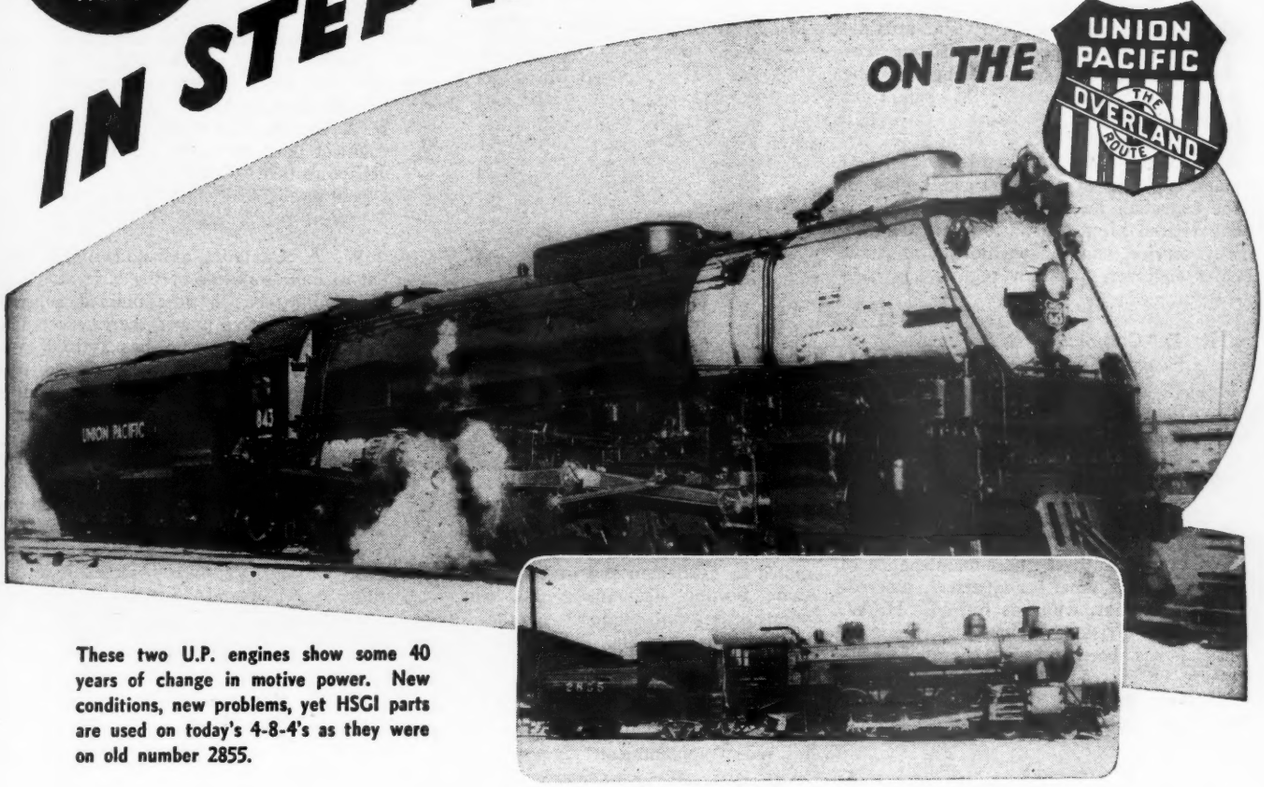
Crosby Miller

1904). From 1904 to 1907 he worked as a draftsman for the Phoenix Bridge Company, then as estimator with C. W. Hudson, consulting engineer. For a short time in 1909, Mr. Miller served as designer for the New York Central, after which

News Department continued on next left-hand page

HSGI
WEAR RESISTING PARTS

IN STEP WITH PROGRESS ON THE UNION PACIFIC THE OVERLAND ROUTE



These two U.P. engines show some 40 years of change in motive power. New conditions, new problems, yet HSGI parts are used on today's 4-8-4's as they were on old number 2855.

THE seventy-six veteran users of HUNT-SPILLER GUN IRON include most Class I railroads of America. One of these is the historic Union Pacific, whose steam locomotives have been maintained with HSGI parts for more than a generation.

Records like this make quality and dependability a certainty every time you choose any of the parts listed below.

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HSGI
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Cylinder Packing Rings	Hub Liners	Duplex Sectional Type Packing for Cylinders and Valves (Duplex Springs for Above Sectional Packing)
Pistons or Piston Bull Rings	Shoes and Wedges	
Valve Bushings	Floating Rod Bushings	
Valve Packing Rings	Light Weight Valves	Cylinder Snap Rings,
Valve Bull Rings	Cylinder Liners and Pistons for Diesel Service	Valve Rings, All Shapes

he joined the Pennsylvania Steel Company as designer and estimator. He went with the Chesapeake & Ohio in 1914 as bridge engineer, with headquarters at Richmond. In March, 1943, he was advanced to assistant chief engineer there, and became chief engineer in May, 1944.

J. A. Erskine, bridge draftsman of the Chicago, Rock Island & Pacific at Chicago, has been appointed assistant engineer of bridges and buildings of the Alton, with headquarters as before at Chicago.

Frederic W. Alexander, assistant chief engineer of the Western region of the Canadian Pacific, at Winnipeg, Man., has retired after nearly 50 years of railway service, and the position of assistant chief engineer, Western region, has been discontinued.

R. D. Claborn, assistant engineer on the Chicago, Milwaukee, St. Paul & Pacific, at Savanna, Ill., has been promoted to division engineer of the Dubuque & Illinois division, with the same headquarters, succeeding **Hubert Wuerth,** who has retired.

R. A. Morrison, division engineer of the Pere Marquette at Detroit, Mich., has been promoted to engineer-maintenance of way, with the same headquarters, succeeding **C. J. Rist,** who has retired. **H. W. Kellogg,** division engineer at Saginaw, Mich., has been transferred to Detroit, where he succeeds Mr. Morrison. **C. I. Hartsell,** assistant engineer at Saginaw, has been promoted to division engineer to replace Mr. Kellogg.

D. W. Brosnan, superintendent of the Alabama Great Southern division of the Southern at Birmingham, Ala., has been promoted to chief engineer, maintenance of way and structures, Western Lines, with headquarters at Cincinnati, Ohio, succeeding **A. A. Woods,** who has retired after 50 years of service. **T. M. von Sprecken,** engineer of bridges, Western Lines, at Cincinnati, has been advanced to chief engineer, maintenance of way and structures, Eastern Lines, with headquarters at Charlotte, N. C. **E. S. Birkenwald,** assistant engineer of bridges at Knoxville, Tenn., has been promoted to engineer of bridges, with headquarters at Cincinnati, where he succeeds Mr. von Sprecken.

MECHANICAL

C. F. Burns has been appointed master mechanic of the Boston & Albany, with headquarters at West Springfield, Mass.

F. L. Hoffman has been appointed assistant master mechanic of the New York Central with headquarters at Buffalo, N. Y.

O. M. Toomey has been appointed assistant to the superintendent of motive power of the Western Pacific, with headquarters at Sacramento, Cal.

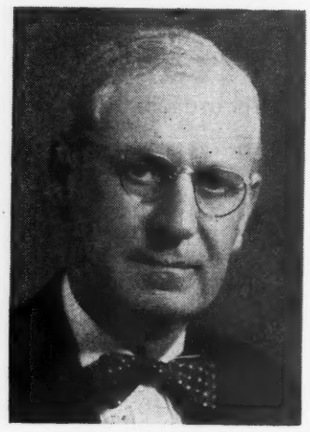
R. L. Pierce has been appointed superintendent motive power of the Georgia & Florida, with headquarters at Douglas, Ga., succeeding **George Crowder,** whose death is reported elsewhere in these columns.

Frank H. Einwaechter, whose advancement to chief engineer of motive power and equipment of the Baltimore & Ohio at Baltimore, Md., was announced in the

Frank H. Einwaechter

Railway Age of January 12, entered the service of the B. & O. as apprentice in 1913. In November, 1917, he was promoted to draftsman and in July, 1923, became leading draftsman. He was appointed assistant engineer of the Mount Clare shops in June, 1927, and in June, 1937, assistant engineer in the locomotive department. Mr. Einwaechter was advanced to mechanical engineer in January, 1942, and maintained this position until his recent appointment.

W. B. Whitsitt, whose retirement as chief engineer of motive power and equipment of the Baltimore & Ohio was announced in the *Railway Age* of January 12, was born on May 27, 1883, at Lexington, Ky. He entered railway service in 1903 as a draftsman for the Baltimore &



W. B. Whitsitt

Ohio at Newark, Ohio. In 1907, he was transferred to the Mt. Clare shops at Baltimore, Md., where he became an apprentice instructor in 1915. He was advanced to assistant chief draftsman in 1917, chief draftsman in 1918, assistant mechanical engineer in 1922, and mechanical engineer in 1926. Mr. Whitsitt was promoted to assistant chief of motive power and equipment in 1937, then chief of motive power and equipment in 1942, with headquarters in Baltimore, Md. Mr. Whitsitt's duties as chief of motive power and equipment included authority over research, design, standards, and new construction.

F. A. Benger, acting chief mechanical engineer of the Canadian Pacific, has been appointed chief mechanical engineer, with headquarters as before at Montreal, Que. **R. A. Smith,** chief draftsman and assistant engineer until transferred to the munitions department in World War II, has been named mechanical engineer (locomotive) at Montreal.

W. A. Carlson, assistant superintendent of motive power of the Erie at Cleveland, Ohio, has been appointed superintendent of motive power there, succeeding **William Moore,** who has retired after 51 years of service. **C. K. James,** district master mechanic for the Western district with headquarters at Meadville, Pa., succeeds Mr. Carlson as assistant superintendent of motive power at Cleveland. **G. L. Fisher,** master mechanic at Meadville, has been promoted to district master mechanic there, succeeding Mr. James, while **H. I. Phelps,** master mechanic at Secaucus, N. J., has been transferred to Meadville, succeeding Mr. Fisher.

SPECIAL

T. W. Parsons, assistant general manager of the Seaboard Air Line at Jacksonville, Fla., has been appointed chief of safety and operating rules, with headquarters as before, and the position of assistant general manager there has been abolished.

Thomas A. Dodge has been appointed western traffic manager of the Union Refrigerator Transit Co., with headquarters at Minneapolis, Minn. **E. J. Rummel** has been appointed general agent, and **B. J. Frisby,** representative, with the same headquarters.

OBITUARY

Hunter C. Leake, special counsel for the Illinois Central at New Orleans, La., died in Chicago on January 24.

George Crowder, superintendent motive power of the Georgia & Florida at Douglas, Ga., since 1929, died there on December 3, 1945.

F. R. Austin, who retired on July 1, 1938, as comptroller of the Chicago & Eastern Illinois, died on January 23, at the age of 78 years, at his home in Chicago.

C. H. Crooks, president and general manager of the Ft. Dodge, Des Moines & Southern, died at Boone, Iowa, on January 27.

Edward B. Hardin, treasurer and general auditor of the Piedmont & Northern and the Durham & Southern, with headquarters at Charlotte, N. C., died there on December 23, 1945.

Table of Freight Operating Statistics appears on next left-hand page

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Freight Operating Statistics of Large Railways—Selected

Region, road, and year		Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross excl. locos. & tenders	Ton-miles (*thousands*): Net-rev. and non-rev.	Road locos. on line: Serviceable: Unstored	Road locos. on line: Serviceable: Stored	Road locos. on line: B. O.	Road locos. on line: Per cent B. O.
New England Region:													
Boston & Albany	1945	362	145,202	158,971	21,342	3,411	68.6	203,824	83,878	65	9	17	18.7
	1944	362	183,253	216,970	41,628	4,593	59.1	315,021	127,444	69	..	24	25.8
Boston & Maine	1945	1,777	319,707	330,247	11,700	11,747	74.7	694,688	309,890	114	7	25	17.1
	1944	1,806	385,572	430,123	35,513	14,555	69.1	924,980	418,168	149	..	26	14.9
N. Y., New H. & Hartf.†	1945	1,815	382,225	540,204	46,730	15,020	75.0	826,665	355,832	205	30	33	17.4
	1944	1,815	454,281	564,899	56,463	17,384	70.0	1,046,690	462,591	216	10	29	15.5
Great Lakes Region:													
Delaware & Hudson	1945	846	259,178	305,651	28,362	10,883	69.4	737,644	383,464	109	77	29	13.5
	1944	846	316,525	386,513	37,296	13,996	68.6	979,702	519,622	123	56	40	18.3
Del., Lack. & Western	1945	971	306,991	342,027	40,147	13,123	71.6	842,030	395,891	109	38	56	27.6
	1944	971	377,514	441,487	68,370	16,367	68.9	1,078,522	510,177	136	33	35	17.2
Erie	1945	2,243	768,676	816,374	63,957	37,236	68.1	2,377,540	994,129	271	48	73	18.6
	1944	2,244	1,006,141	1,081,675	79,127	47,728	66.9	3,121,903	1,356,220	322	10	67	16.8
Grand Trunk Western	1945	1,026	258,508	263,464	1,805	8,087	69.9	510,895	230,107	68	1	7	9.2
	1944	1,026	251,080	260,213	2,106	8,246	70.0	512,624	231,242	64	2	9	12.0
Lehigh Valley	1945	1,242	320,047	351,511	46,384	13,244	68.0	920,759	463,862	127	32	10	5.9
	1944	1,247	448,813	500,919	73,516	20,168	63.8	1,422,935	688,532	156	..	11	6.6
New York Central	1945	10,311	2,993,850	3,200,989	208,707	105,726	64.7	7,047,881	3,186,504	1,004	78	301	21.8
	1944	10,325	3,744,598	4,016,460	251,117	145,410	63.4	10,135,475	4,729,783	1,135	25	239	17.1
New York, Chi. & St. L.	1945	1,656	560,803	571,399	7,164	22,419	70.9	1,378,432	597,638	147	27	20	10.3
	1944	1,656	721,919	734,922	9,448	29,725	70.2	1,898,043	868,682	162	27	20	9.6
Pere Marquette	1945	1,915	320,346	330,507	8,966	10,516	72.8	671,382	318,925	110	25	26	16.1
	1944	1,915	452,542	464,192	10,695	15,913	68.4	1,050,952	504,586	147	..	19	11.4
Pitts. & Lake Erie	1945	229	73,436	73,436	8	2,474	62.2	206,117	115,676	32	6	12	24.0
	1944	229	92,300	97,634	4	4,037	64.9	342,116	200,934	31	1	13	28.9
Wabash	1945	2,381	636,976	657,521	16,788	22,362	74.3	1,392,468	641,929	149	18	44	20.9
	1944	2,381	781,217	802,492	20,022	29,419	72.1	1,878,481	883,952	176	3	38	17.5
Central Eastern Region:													
Baltimore & Ohio	1945	6,095	2,006,011	2,477,522	252,075	68,592	64.4	4,895,737	2,394,808	874	74	233	19.7
	1944	6,100	2,465,299	3,083,767	312,737	88,243	64.9	6,371,373	3,190,908	913	6	223	19.5
Central of New Jersey†	1945	654	174,768	199,073	39,891	6,100	66.7	442,717	233,958	97	12	39	26.4
	1944	654	221,809	261,194	59,539	8,393	63.1	615,037	314,253	116	13	23	15.1
Chicago & Eastern Ill.	1945	912	188,684	190,210	4,453	5,007	70.4	333,613	166,428	57	9	9	12.0
	1944	912	255,130	258,055	4,785	7,971	63.2	549,055	254,338	71	6	4	4.9
Elgin, Joliet & Eastern	1945	392	105,133	109,565	3,575	3,083	68.3	233,083	125,508	44	3	26	35.6
	1944	392	132,820	136,964	3,674	3,806	67.1	294,541	160,510	65	..	11	14.5
Long Island	1945	372	43,309	44,946	16,450	517	58.8	34,265	13,727	50	..	3	5.7
	1944	372	37,236	38,911	17,191	432	58.9	30,010	13,115	49	..	3	5.8
Pennsylvania System	1945	10,024	3,770,916	4,373,068	595,642	145,447	65.4	10,062,190	4,833,925	1,886	130	215	9.6
	1944	9,872	4,659,371	5,439,895	738,734	181,590	63.8	13,048,481	6,366,831	2,014	1	194	8.8
Reading	1945	1,365	523,609	583,145	67,437	16,799	63.6	1,278,345	682,648	268	17	49	14.7
	1944	1,409	598,906	679,320	88,368	20,377	66.7	1,531,546	841,945	271	12	49	14.8
Pocahontas Region:													
Chesapeake & Ohio	1945	3,045	838,824	903,287	38,895	34,100	58.6	2,760,306	1,580,147	458	8	44	8.6
	1944	3,032	1,106,200	1,189,803	55,234	51,865	56.9	4,499,311	2,568,935	433	19	63	12.2
Norfolk & Western	1945	2,139	618,559	657,693	42,995	26,808	60.1	2,205,075	1,169,777	245	88	19	5.4
	1944	2,132	786,669	832,785	55,587	36,464	60.1	3,116,661	1,701,291	277	32	22	6.6
Southern Region:													
Atlantic Coast Line	1945	4,922	854,300	866,201	12,215	22,026	66.0	1,431,181	643,555	370	6	29	7.2
	1944	4,952	1,025,287	1,036,615	14,294	27,194	62.8	1,819,084	795,669	376	11	30	7.2
Central of Georgia†	1945	1,783	310,614	318,009	5,501	7,552	70.3	489,285	226,999	95	..	9	8.7
	1944	1,783	306,558	313,305	4,653	7,585	70.9	488,478	227,542	88	..	18	17.0
Gulf, Mobile & Ohio	1945	1,931	306,651	386,152	4,393	10,825	75.2	685,719	338,294	107	1	6	5.3
	1944	1,941	290,734	373,452	2,749	11,046	77.3	679,313	332,443	104	5	9	7.6
Illinois Central (incl. Yazoo & Miss. Vy.)	1945	6,346	1,425,645	1,435,641	51,764	51,679	64.3	3,609,836	1,706,051	592	47	59	8.5
	1944	6,347	1,677,612	1,691,672	31,451	64,784	62.7	4,523,847	2,096,236	651	..	45	6.5
Louisville & Nashville	1945	4,749	1,410,037	1,514,588	34,800	33,677	65.6	2,307,705	1,151,787	399	28	59	12.1
	1944	4,734	1,581,191	1,716,342	43,857	42,090	65.5	2,965,282	1,535,068	407	12	65	13.4
Seaboard Air Line*	1945	4,159	794,296	828,272	18,838	24,197	73.4	1,499,644	694,424	272	1	69	20.2
	1944	4,161	855,475	916,448	16,446	25,332	70.2	1,645,274	764,853	292	3	49	14.2
Southern	1945	6,471	1,941,425	1,971,530	32,700	45,479	71.2	2,820,334	1,299,132	614	18	115	15.4
	1944	6,471	2,158,573	2,202,420	40,011	49,836	69.7	3,149,347	1,448,420	592	..	95	13.8
Northwestern Region:													
Chi. & North Western	1945	8,062	1,209,560	1,257,633	28,772	38,387	65.2	2,603,656	1,209,190	388	17	110	21.4
	1944	8,074	1,157,754	1,211,029	24,158	38,540	68.0	2,589,291	1,194,740	373	6	109	22.3
Chicago Great Western	1945	1,445	285,150	289,728	8,185	9,049	69.2	589,570	258,558	73	..	7	8.8
	1944	1,445	289,331	298,226	11,816	9,700	75.0	608,724	281,296	73	..	7	8.8
Chi., Milw., St. P. & Pac.†	1945	10,723	1,497,781	1,589,815	92,821	52,153	67.5	3,473,363	1,627,070	503	17	90	14.8
	1944	10,715	1,549,413	1,647,692	83,775	57,421	70.8	3,729,472	1,800,739	499	40	69	11.3
Chi., St. P., Minneap. & Om.	1945	1,606	221,952	240,617	14,025	6,148	73.1	404,091	193,772	93	6	25	20.2
	1944	1,606	212,394	230,967	12,971	5,922	71.1	390,817	181,800	94	25	13	9.8
Duluth, Missabe & I. R.	1945	546	146,515	147,221	1,403	8,180	51.2	745,696	454,875	50	..	1	2.0
	1944	547	157,504	158,128	1,102	8,600	50.5	790,263	477,786	53	..	2	3.6
Great Northern	1945	8,275	1,219,537	1,219,770	43,861	47,607	60.5	3,552,935	1,622,035	374	58	53	10.9
	1944	8,276	1,454,836	1,462,247	63,695	59,283	65.4	4,214,955	2,013,578	433	8	51	10.4
Min., St. P. & S. St. M.	1945	4,259	530,985	544,149	11,643	15,303	64.5	1,080,266	518,960	130	1	11	7.7
	1944	4,259	469,480	483,606	7,915	13,805	66.2	937,547	444,626	130	3	5	3.6
Northern Pacific	1945	6,577	953,483	1,010,849	71,158	36,906	67.6	2,568,613	1,223,953	393	9	52	11.5
	1944	6,571	1,045,503	1,121,066	82,914	45,458	72.2	3,019,511	1,487,513	382	8	61	13.5
Central Western Region:													
Alton†	1945	915	249,127	259,179	922	6,423	68.3	428,526	205,928	61	8	10	12.7
	1944	915	290,694	314,434	724	8,187	70.8	530,432	243,405	72	1	5	6.4
Atch., Top. & S. Fe (incl. G. C. & S. F. & P. & S. F.)	1945	13,113	3,074,172	3,253,454	182,217	115,338	70.8	7,298,479	2,949,192	841	29	132	13.2
	1944	13,093	3,660,896	3,888,918	224,063	145,529	71.2	9,069,031	3,739,536	856	4	123	12.5
Chi., Burl. & Quincy	1945	8,768	1,471,121	1,542,418	56,892	54,657	63.8	3,745,533	1,678,740	442	..	75	14.5
	1944	8,791	1,608,733	1,693,696	51,697	63,888	67.4	4,250,098	1,964,563	481	..	59	10.9
Chi., Rock I. & Pac.†	1945	7,717	1,318,125	1,347,189	18,904	39,801	68.5	2,570,141	1,160,722	366	..	86	19.0
	1944	7,718	1,358,313	1,415,439	14,501	43,668	71.3	2,760,534	1,263,143	393	..	75	16.0
Denver & R. G. Wn.†	1945	2,386	479,765	533,933	77,023	15,779	76.5	962,777	455,554	170	2	40	18.9
	1944	2,388	542,827	611,175	94,099	19,972	76.5	1,220,596	579,992	175	1	38	17.8
Southern Pacific—Pac. Lines	1945	8,173	2,102,440	2,402,628	380,237	91,758	72.3	5,766,028	2,434,235	800	..	142	15.1
	1944	8,193	2,299,354	2,638,971	419,588	100,514	69.7	6,454,900	2,721,732	850	..	128	13.1
Union Pacific	1945	9,778	3,177,469	3,331,039	241,069	119,197	68.2	7,613,638	3,314,706	841	28	85	8.9
	1944	9,782	3,479,274	3,711,407	303,812	137,219	68.7	8,729,166	3,686,691	868	5	64	6.8
Southwestern Region:													
Mo.-Kans.-Texas Lines	1945	3,241	490,864	500,990	11,182	13,424	69.4	853,242	388,581	125	23	13	8.1
	1944	3,241	752,960	778,328	13,844	21,795	64.9	1,430,391	650,971	155	..	15	8.8
Missouri Pacific†	1945	7,056	1,467,794	1,564,808	39,091	49,931	67.3	3,326,364	1,510,934	432	1	84	16.2
	1944	7,071	1,706,688	1,792,037	44,158	62,972	67.1	4,190,686	1,904,487	483	1	60	11.0
Texas & Pacific	1945	1,871	348,637	348,637	7,290	11,323	65.1	757,437	313,624	114	43	10	6.0
	1944	1,882	448,261	448,261	9,195	15,723	67.6	1,028,613	437,427	129	13	14	9.0
St. Louis-San Francisco†	1945	4,615	1,060,670	1,122,179	14,470	24,604	65.5	1,664,165	747,013	316	..	30	8.7
	1944	4,616	1,133,133	1,226,294	28,073	28,865	69.6	1,874,715	869,682	319	..	31	8.9
St. Louis-San Fran. & Texas	1945	161	34,530	36,859	7	545	64.7	36,625	15,571	9	..	..	..
	1944	159	32,815	34,328	3	503	71.1	32,240	13,856	8	..	..	..
St. Louis Southw. Lines†	1945	1,600	333,289	337,574	4,509	12,357	76.9	520,272	232,569	99	23	19	13.5
	1944	1,600	463,084	471,044	6,514	17,813	72.0	1,106,752	514,827	116	6	18	12.9
Texas & New Orleans	1945	4,321	869,006	870,641	25,195	24,185	73.2	1,520,620	693,120	227	5	49	17.4
	1944	4,333	1,155,838	1,159,266	28,737	30,911	65.6	2,067,473	906,788	263	..	21	7.4

Items for the Month of October, 1945 Compared with October, 1944

Region, road, and year	Freight cars on line: Home	Foreign	Total	Per Cent B. O.	G.t.m. per train-hr. excl.locos. and tenders	G.t.m. per train-mi. excl.locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
New England Region:													
Boston & Albany 1945	256	4,530	4,786	0.3	21,776	1,416	583	24.6	529	31.3	7,474	310	70.6
1944	312	6,210	6,522	0.3	25,109	1,373	701	27.7	623	38.0	11,357	185	97.6
Boston & Maine 1945	2,011	11,454	13,465	1.6	33,174	2,177	971	26.4	763	38.7	5,625	105	81.1
1944	2,131	11,480	13,611	3.2	37,449	2,406	1,088	28.7	1,017	51.2	7,469	98	90.1
N. Y., New H. & Hartf.† 1945	2,539	18,475	21,014	5.4	29,465	2,168	933	23.7	547	30.8	6,324	90	74.9
1944	2,860	19,098	21,958	3.5	33,486	2,333	1,031	26.6	649	34.9	8,222	100	80.8
Great Lakes Region:													
Delaware & Hudson 1945	4,255	5,226	9,481	3.9	48,443	2,865	1,489	35.2	1,305	53.4	14,622	108	52.2
1944	3,445	6,515	9,960	2.8	53,641	3,115	1,652	37.1	1,700	66.7	19,813	102	65.4
Del., Lack. & Western 1945	5,780	10,075	15,855	4.1	40,853	2,780	1,307	30.2	796	36.9	13,152	112	67.8
1944	5,236	12,560	17,796	3.0	42,333	2,884	1,364	31.2	904	42.1	16,949	120	89.1
Erie 1945	11,225	22,219	33,444	5.4	51,322	3,116	1,303	26.7	916	50.3	14,297	99	79.4
1944	6,956	28,728	35,684	2.8	51,307	3,119	1,355	28.4	1,186	62.4	19,496	92	101.4
Grand Trunk Western 1945	2,934	7,907	10,841	4.3	40,377	1,985	894	28.5	698	35.1	7,235	87	122.4
1944	2,246	7,296	9,542	3.4	41,602	2,051	925	28.0	759	38.6	7,270	89	118.1
Lehigh Valley 1945	8,110	13,963	22,073	4.2	49,482	2,974	1,498	35.0	675	28.3	12,048	105	80.6
1944	5,608	19,613	25,221	1.9	51,890	3,245	1,570	34.1	821	37.7	17,811	107	117.1
New York Central 1945	50,313	76,721	127,034	4.5	38,249	2,392	1,082	30.1	772	39.6	9,950	113	89.1
1944	43,969	102,521	146,490	2.8	42,514	2,739	1,278	32.5	1,029	49.9	14,777	103	109.6
New York, Chi. & St. L. 1945	2,986	12,387	15,373	3.2	46,309	2,466	1,069	26.7	1,257	66.5	16,416	94	103.6
1944	2,383	13,656	16,039	2.2	49,444	2,640	1,208	29.2	1,754	85.5	16,921	87	121.2
Pere Marquette 1945	4,420	9,894	14,314	4.9	36,903	2,112	1,003	30.3	786	35.6	5,372	94	74.6
1944	2,231	10,251	12,482	2.3	40,263	2,352	1,129	31.7	1,316	60.7	8,500	89	99.5
Pitts. & Lake Erie 1945	5,100	8,212	13,312	3.7	43,040	2,811	1,578	46.8	280	9.6	16,295	85	54.1
1944	3,450	8,992	12,442	5.3	50,933	3,707	2,177	49.8	515	15.9	28,305	94	77.4
Wabash 1945	6,275	12,932	19,207	4.7	41,714	2,201	1,015	28.7	1,080	50.6	8,697	113	108.3
1944	5,855	15,414	21,269	3.2	46,323	2,430	1,143	30.0	1,422	65.7	11,976	102	127.5
Central Eastern Region:													
Baltimore & Ohio 1945	42,673	52,986	95,659	5.1	31,010	2,498	1,222	34.9	795	35.4	12,675	150	77.6
1944	39,423	64,283	103,706	3.0	30,576	2,642	1,323	36.2	1,010	43.1	16,874	146	99.3
Central of New Jersey† 1945	3,930	13,515	17,445	7.6	29,988	2,621	1,385	38.4	433	16.9	11,540	122	67.1
1944	7,190	12,197	19,387	3.2	34,076	2,783	1,422	37.4	505	21.4	15,500	121	87.5
Chicago & Eastern Ill. 1945	2,444	3,775	6,219	8.2	30,930	1,782	889	33.2	867	37.0	5,887	127	86.3
1944	2,209	4,084	6,293	4.8	37,447	2,203	1,020	31.9	1,285	63.7	8,996	110	107.1
Elgin, Joliet & Eastern 1945	7,893	5,470	13,363	2.6	19,013	2,315	1,247	40.7	295	10.6	10,328	140	68.8
1944	9,101	6,237	15,338	2.3	18,563	2,360	1,286	42.2	334	11.8	13,209	136	84.7
Long Island 1945	25	5,608	5,633	.3	6,624	804	322	26.6	79	5.0	1,190	315	53.5
1944	40	5,664	5,704	.3	6,780	831	363	30.4	75	4.2	1,137	296	51.8
Pennsylvania System 1945	127,216	111,066	238,282	5.8	38,005	2,746	1,319	33.2	651	30.0	15,556	128	78.5
1944	113,314	120,610	233,924	3.7	38,688	2,887	1,409	35.1	872	39.0	20,804	120	97.9
Reading 1945	11,920	22,036	33,956	2.6	30,838	2,451	1,309	40.6	645	25.0	16,133	110	73.5
1944	12,043	26,821	38,864	2.0	31,535	2,558	1,406	41.3	697	25.3	19,276	122	86.1
Pocahontas Region:													
Chesapeake & Ohio 1945	44,987	17,097	62,084	1.7	49,401	3,347	1,916	46.3	866	31.9	16,740	87	65.6
1944	36,448	18,058	54,506	1.2	57,388	4,114	2,349	49.5	1,507	53.5	27,331	76	85.4
Norfolk & Western 1945	30,192	6,962	37,154	1.9	57,794	3,614	1,917	43.6	1,072	40.8	17,641	95	70.2
1944	31,728	8,245	39,973	1.5	62,835	4,024	2,197	46.7	1,389	49.5	25,741	88	93.3
Southern Region:													
Atlantic Coast Line 1945	8,411	18,228	26,639	1.3	27,108	1,686	758	29.2	771	40.0	4,218	121	75.5
1944	8,329	21,593	29,922	1.6	29,763	1,785	781	29.2	935	50.9	5,183	105	86.8
Central of Georgia† 1945	1,946	7,377	9,323	1.2	29,003	1,580	733	30.1	818	38.7	4,107	138	108.5
1944	1,913	6,928	8,841	1.3	29,642	1,602	746	30.0	864	40.6	4,117	128	102.3
Gulf, Mobile & Ohio 1945	2,024	7,109	9,133	.8	36,622	2,241	1,106	31.3	1,143	48.6	5,651	118	116.9
1944	1,670	7,330	9,000	.8	39,163	2,344	1,147	30.1	1,204	51.8	5,525	113	108.5
Illinois Central (incl. 1945	21,750	36,175	57,925	1.0	40,911	2,593	1,226	33.0	1,049	49.4	8,672	122	74.1
Yazoo & Miss. Vy.) 1944	17,784	36,085	53,869	1.1	42,405	2,756	1,277	32.4	1,247	61.5	10,654	117	83.2
Louisville & Nashville 1945	30,753	15,695	46,448	3.9	26,279	1,637	817	34.2	812	36.2	7,824	134	108.8
1944	29,000	15,243	44,243	3.7	29,429	1,875	971	36.5	1,134	47.4	10,460	131	123.6
Seaboard Air Line* 1945	6,303	18,263	24,566	1.7	32,383	1,923	890	28.7	962	45.7	5,386	123	90.1
1944	6,225	18,745	24,970	2.0	32,912	1,958	910	30.2	1,036	48.9	5,930	122	96.4
Southern 1945	16,516	35,757	52,273	4.5	25,003	1,472	678	28.6	833	41.0	6,476	149	92.7
1944	16,248	35,508	51,756	2.3	24,498	1,484	682	29.1	905	44.6	7,220	148	110.5
Northwestern Region:													
Chi. & North Western 1945	20,771	31,895	52,666	3.7	31,660	2,243	1,042	41.5	692	33.7	4,838	128	85.5
1944	20,886	33,261	54,147	3.1	34,978	2,310	1,066	31.0	705	33.5	4,773	117	87.4
Chicago Great Western 1945	1,103	5,410	6,513	3.3	35,399	2,079	912	28.6	1,341	67.9	5,772	125	125.7
1944	821	5,154	5,975	1.3	37,068	2,109	974	29.0	1,561	71.8	6,280	122	129.5
Chi., Milw., St. P. & Pac.† 1945	22,902	35,432	58,334	2.1	36,224	2,339	1,096	31.2	881	41.9	4,895	116	96.7
1944	21,093	30,722	51,815	2.0	38,209	2,423	1,170	31.4	1,083	48.8	5,421	113	98.1
Chi., St. P., Minneap. & Om. 1945	1,110	7,132	8,242	6.9	23,458	1,889	906	31.5	774	33.6	3,892	114	72.3
1944	837	6,446	7,283	5.3	25,793	1,879	874	30.7	797	36.5	3,652	106	63.5
Duluth, Missabe & I. R. 1945	14,984	413	15,397	3.2	89,081	5,229	3,190	55.6	964	33.9	26,874	66	113.2
1944	15,000	461	15,461	3.5	88,944	5,144	3,110	55.6	990	35.3	28,176	63	108.9
Great Northern 1945	19,994	21,748	41,742	2.6	43,385	2,935	1,340	34.1	1,259	61.1	6,323	93	90.6
1944	21,042	23,863	44,905	1.8	43,078	2,919	1,394	34.0	1,404	63.2	7,848	96	108.5
Min., St. P. & S. St. M. 1945	5,699	9,733	15,432	3.1	33,872	2,058	989	33.9	1,055	48.2	3,931	91	127.5
1944	5,802	7,181	12,983	2.4	35,105	2,010	953	32.2	1,065	50.0	3,368	89	117.6
Northern Pacific 1945	16,334	20,675	37,009	4.0	39,221	2,715	1,294	33.2	1,054	47.0	6,003	122	84.6
1944	14,860	19,990	34,850	2.6	43,189	2,898	1,427	32.7	1,285	54.4	7,302	122	93.6
Central Western Region:													
Alton† 1945	2,436	6,242	8,678	1.0	39,096	1,740	836	32.1	749	34.2	7,260	124	112.1
1944	1,335	7,030	8,365	2.2	39,733	1,844	846	29.7	914	43.4	8,581	108	135.6
Atch., Top. & S. Fe (incl. 1945	40,101	39,902	80,003	4.3	43,195	2,390	966	25.6	1,153	63.7	7,255	109	115.0
G. C. & S. F. & P. & S. F.) 1944	40,445	53,298	93,743	2.7	43,694	2,493	1,028	25.7	1,285	70.3	9,213	109	140.8
Chi., Burl. & Quincy 1945	15,414	31,101	46,515	2.9	39,926	2,556	1,146	30.7	1,180	60.2	6,176	105	106.3
1944	15,204	35,739	50,943	2.1	41,206	2,656	1,228	30.8	1,270	61.1	7,209	108	110.4
Chi., Rock I. & Pac.† 1945	10,140	24,026	34,166	3.4	33,748	1,963	887	29.2	1,086	54.4	4,852	115	101.9
1944	9,598	25,790	35,388	3.1	35,861	2,051	939	28.9	1,184	57.4	5,279	107	103.0
Denver & R. G. Wn.† 1945	7,413	7,433	14,846	3.8	29,702	2,032	961	28.9	953	43.1	6,159	175	98.2
1944	7,624	10,089	17,713	3.2	31,944	2,279	1,083	29.0	1,048	47.2	7,835	165	109.5
Southern Pacific—Pac. Lines 1945	23,648	56,294	79,942	3.0	35,976	2,768	1,168	26.5	962	50.1	9,608	108	101.5
1944	24,689	60,731	85,420	2.3	36,693	2,829	1,193	27.1	1,008	53.4	10,716	101	106.9
Union Pacific 1945	24,338	42,938	67,276	3.2	45,786	2,428	1,057	27.8	1,567	82.6	10,935	126	126.0
1944	25,770	50,152	75,922	2.3	46,874	2,533	1,070	26.9	1,597	86.6	12,158	121	144.9
Southwestern Region:													
Mo.-Kans.-Texas Lines 1945	1,482	6,473	7,955	.2	30,903	1,745	795	28.9	1,598	79.5	3,868	91	105.8
1944	1,459	9,174	10,633	.4	34,124	1,906	867	29.9	2,184	112.6	6,479	82	154.5
Missouri Pacific† 1945	13,476	24,414	37,890	1.6	37,523	2,281	1,036	30.3	1,307	64.1	6,908	113	106.7
1944	10,673	28,362	39,035	1.7	40,877	2,468	1,122	30.2	1,555	76.6	8,688	107	116.9
Texas & Pacific 1945	1,882	6,430	8,312	1.3	40,557	2,183	904	27.7	1,222	67.8	5,407	92	74.4
1944	1,520	7,746	9,266	1.3	40,849	2,307	981	27.8	1,495	79.4	7,498	86	102.4
St. Louis-San Francisco† 1945	5,921	15,832	21,753	2.1	30,650	1,578	708	30.4	1,099	55.2	5,221	134	110.8
1944	5,585	13,581	19,166	1.9	32,418	1,665	772	30.1	1,458	69.5	6,078	132	121.1
St. Louis-San Fran. & Texas 1945	....	301	301	3.7	20,507	1,063	452	28.6	1,520	82.3	3,120	121	150.1
1944	....	246	246	8.9	21,197	983	423	27.5	1,699	86.7	2,811	124	132.4
St. Louis Southw. Lines† 1945	1,206	6,006	7,212	1.9	27,086	1,567	701	18.8	1,112	76.8	4,689	117	83.4
1944	1,058	7,900	8,958	.9	39,461	2,396	1,115	28.9	1,934	92.9	10,380	81	116.6
Texas & New Orleans 1945	3,693	17,438	21,131	3.8	32,279	1,766	805	28.7	1,074	51.2	5,174	93	107.7
1944	3,469	18,330	21,799	2.4	31,322	1,805	792	29.3	1,317	68.5	6,751	91	140.2

* Report of receivers.
† Report of trustee or trustees.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

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Current Publications

Headlights and Markers, an Anthology of Railroad Stories, edited by Frank P. Donovan, Jr., and Robert Selph Henry, 406 pp.. Published by Creative Age Press, Inc., 11 E. 44th St., New York 17, N. Y. Price, $2.75.

A collection of 17 stories covering all phases of railroading from coast to coast, and packed with action and adventure. Stories cover the period from the Civil War to date, and among the authors whose stories are included are Frank H. Spearman, Marquis James, Cy Warman and Octavus Roy Cohen.

Articles in Periodicals

Britain's Financial Position. Monthly Review of Labor and Industry in Britain, January, 1946, issue, pp. 1-7.

The fact that Britain has lost one-quarter of her national wealth during the war is revealed in a White Paper published on December 6, which gives a full account, for the first time, of Britain's financial position as affected by six years of total war. This summary surveys the main figures of the White Paper "Statistical Material Presented During the Washington Negotiations (Cmd. 6707)." The summary is divided into four parts: the external problem, detailed aspects of the external problem, the position at home and the total picture. Copies of both the White Paper and the summary are available from the British Information Services which has offices in New York, Chicago, Washington, D. C., and San Francisco, Cal.

Trade Unions in Britain. Monthly Review of Labor and Industry in Britain, January, 1946, issue, pp. 8-17.

Discusses the scope of collective bargaining, legal position of trade unions, limits on trade union activity, registration of unions, political activities of trade unions, organization of labor unions, employers' organizations, prevention of disputes and labor-management co-operation. Statistics on union membership and income and expenditures are also included. Available from the New York, Chicago, Washington, D. C., and San Francisco, Cal., offices of the British Information Services.

Pamphlets

A Glossary of Traffic Terms and Abbreviations and Their Explanations, prepared by Wm. J. Knorst, 24 pages. Issued by the Traffic Service Corporation, 418 S. Market St., Chicago 7, Ill. Price, 25 cents.

An author's note explains that the pamphlet is not intended to be an exhaustive treatment of the subject matter, but that it should be considered as a convenient listing of the more common terms and expressions used in the daily routine of the traffic department.

A Program for Sustaining Employment. Report of Committee on Economic Policy, Chamber of Commerce of the United States of America. 32 pages. Published by the Chamber of Commerce of the United States of America, Washington 6, D. C. Free.

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society. It contains long-range policy suggestions as well as proposals for prompt action.

Trade Publications

Teco Connectors for Timber Construction in Railroad Service, 18 pages, illustrations. Published by the Timber Engineering Company, Washington, D. C. Free.

According to this booklet, the railroad industry is one of the four largest users of lumber and forest products. It discusses the standardization and prefabrication of structures, and names 72 domestic roads which employ the "Teco" system of timber construction. Separate chapters discuss the split ring, spike grid, clamping plate, shear plate, toothed ring and claw plate types of timber connectors and their application in buildings, bridges and other exterior structures.

Pullman Progress (a folder). Published by the Pullman Company, 79 East Adams Street, Chicago, Ill. Limited supply available for distribution.

A revised edition of the folder which illustrates and describes the evolution of the Pullman car from 1859 to 1945. Most of the photographs are in color. Also included are illustrations of new types of cars such as the three-tier sleeper and the duplex-roomette.

Fight Talk. Published by the General Cable Corporation, 420 Lexington avenue, New York 17, N. Y. Free.

This book reviews the war effort of the General Cable Corporation. Not content to rest on its production achievements alone, and convinced that a fighting spirit in the highest degree must constantly be maintained on all fronts, it undertook to create and publicize a series of wartime, incentive and conservation posters which it distributed with its compliments, to the armed forces, to government officials and to thousands of other war plants. The influence of this campaign upon morale was reflected far beyond the confines of its own plants. The campaign helped to sell War bonds, stimulated Red Cross contributions and served to arouse enthusiasm in thousands of workers in other plants. Requests for copies of this material having been received from numerous quarters, General Cable Corporation decided to assemble the various presentations in a form suitable for widespread distribution. The first part of this book is devoted to these presentations. The posters are all in color and each is accompanied by data giving the date of publication, number distributed, where distributed and purpose. Included also are seven posters designed to impress General Cable employees with the importance of the functions performed by the Inspection Department and the influence which this department exercises over the finished product.

The second part of the book is devoted to the Corporation's record of achievement and contains illustrations showing the Army, Navy and Maritime Commission awards being conferred upon the various plants. The third and concluding section describes and illustrates two of the ways in which the Corporation aided the war effort. One was the creation of a cable pipe, 30 continuous nautical miles in length, and the other was the development of the all-metal assault wire dispenser used by the Army Signal Corps.

Lamps

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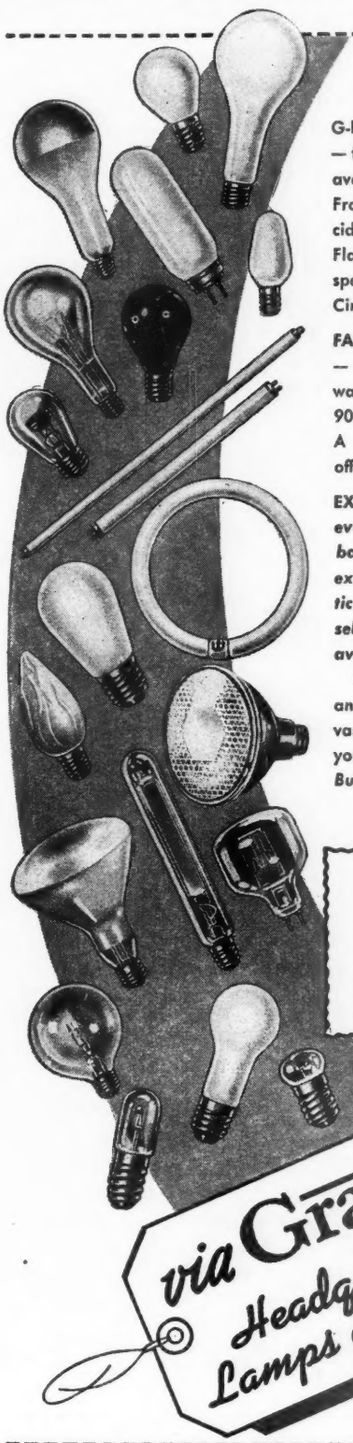

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